# POPULAR Computing WEEKLY

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Vol 6 No 8


# Clive's portable unveiled this week

Full details on page 4



## NEWS DESK

Amstrad set to launch Spectrum with disc drive

Advance signs up Laurel and Hardy

## SPECIAL supplement

## Adventure games

Defender of the Crown

PCW Pawn

Level 9's Knight Orc

Tony Bridge's Megahints

Defender of the Crown





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# Contents



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ABC

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# Sir Clive's comeback – the portable Z88

SIR CLIVE Sinclair makes his comeback into the computer industry this week with the unveiling of his portable machine the Z88

Previewed at the *Which Computer?* show, the Z88 is according to Sir Clive "the culmination of what I have been trying to do for many many years – produce a properly portable personal computer"

The final version Z88 bears little resemblance to the machine Sinclair Research originally set out to develop two years ago when it was codenamed Pandora

Gone are plans to use flat tube display Microdrives, or CP/M compatibility Instead, it has a liquid crystal screen, custom-made Eprom cartridges and file compatibility with IBM PCs and clones

## Pricing

The price is lower than expected as well Sir Clive had previously spoken about a price point of around £300–£400 The Z88 will initially cost £227 95

At 11½ inches by 8¼ inches it weighs just under 2lbs and uses four AA batteries which should last 20 hours

The Z88 incorporates the Z80 processor, 32K CMos Ram expandable to a maximum of three megabytes with the addition of battery backed cartridges a built-in suite of software and BBC Basic within the machine The Z80 chip has been used because Sir Clive points out "we had to have a completely CMos system and the Z80 was the only CMos chip around at the time

## IBM compatibility

IBM file compatibility is achieved with the purchase of an I/O cable and floppy disc The I/O cable connects to the IBM from the Z88's RS-232 port the disc contains software which runs on the PC machine and configures the Z88's data so that it can be uploaded Files can also be downloaded from the IBM or compatible to the Z88

The software within the machine has been written by Protechnic of Cambridge It includes a word processor database spreadsheet and "desk diary utilities all integrated These are not cut-down versions of anything – this software is more sophisticated than anything else around" said Sir Clive

## Third party software

However he adds that third party software developers will be encouraged to write for the machine Protechnic will help other software houses for it, and we'll be doing everything we can to make it easy for them" Protechnic also plans to write further software to make the Z88 file compatible with machines other than IBM PCs

## Windowing

The LCD screen is divided into four windows on the left hand side menu options depending on the software used at the time are shown the middle is the work area with eight lines by 80 columns visible Towards the right hand side the third window shows a screen map of the whole document being worked on and on the extreme right the battery status is shown

The keyboard comprises 63 keys plus the space bar made of hard silicon and claims Sir Clive completely silent "We felt it was very important that it should be quiet If you're going into a meeting to take notes on it you don't want to be disturbing everyone with keys clattering"

**Prices**

| | (inc Vat) |
|---|---|
| Z88 | £227.95 |
| Mains adaptor | £9.95 |
| RS232 cable | £9.95 |
| IBM transfer cable | £14.95 |
| Modem | £99.95 |
| Ram cartridges (32K) | £19.95 |
| Eprom cartridges (32K) | £12.95 |
| Ram cartridges (128K) | £49.95 |
| Eprom cartridges (128K) | £49.95 |
| UVA eraser | £29.95 |

## Custom cartridges

More storage space is available with extra Ram and Eprom cartridges in either 32K or 128K versions, with 1Mb versions planned These are around two inches square, and plug into three ports at the front underneath the machine

Sir Clive says that the controversy over the use of Microdrives in the QL led to the development of the solid state cartridges "If we had not done the QL we would have been tempted to use the Microdrive technology in this" he said

Other ports on the Z88 are the RS-232 slot, used for printer modem and PC connections and a Z80 bus on the right hand side of the machine and a mains adaptor on the left hand side Also on the left is a screen contrast control knob

## Mail order

True to Sinclair tradition the Z88 will initially be sold on a mail order basis starting in April Towards the autumn Sir Clive hopes to place the machine in retail outlets

Thorn EMI has already been appointed as a subcontractor (Sir Clive is currently negotiating with one other) to manufacture the Z88 and is building up to a production capacity of 10 000 units per month

What the buyer will get for £227 is simply the machine and carrying case Optional extras are the I/O cable for IBM transfer the extra Ram and Eprom cartridges, and an ultra violet eraser for the cartridges These should be available at launch Also in development is a dedicated modem

The Z88 is a product of Sir Clive's Cambridge Computer company one of the offshoots of Sinclair Research

Sinclair Research now exists only as a holding company for three subsidiaries Cambridge Computer Anamartic which is continuing the research into wafer scale integration and Shaye Communications, based in Winchester which is researching the portable telephone market

# Amstrad plans Spectrum with discs this year

A DISC version of the Spectrum Plus 2 is to be launched this summer by Amstrad Consumer Electronics

Amstrad's chairman, Alan Sugar has spoken of the possibility of selling a Spectrum with built-in drive on a number of occasions and referred to it at the recent Amstrad shareholders meeting where the company announced record profits for the last six months of 1986

The next Spectrum, commonly referred to as the Spectrum Plus 3 will have a 3 inch disc drive substituted for the tape deck on the current Plus 2 model It will stick with 128K Ram and a similar keyboard to the Plus 2, but incorporates a new version of the Amsdos disc operating system It is not expected to have CP/M compatibility, unlike the CPC 6128

As there is no Spectrum disc-based software to speak of, since there has never been a standard Spectrum drive, sales will depend on third party houses and Amsoft converting tape based software to the 3-inch discs, with compilation discs being an obvious early choice Software is likely to be bundled by Amstrad with the machine at launch

The price is expected to be just under £200

● Amstrad's profits for the six months ending December 31 1986, soared to £71 2 million an increase of 159% over the corresponding period in 1985, when profits were £27 5 million The PC1512 range accounted for around 25% of Amstrad's sales

## Modem House: debts over £120,000

AT the creditors' meeting held on February 10 of Scitek – Future Science and Technology better known under its trading name of Modem House the debts of the company were estimated at £126 000

A further £30 816 is currently being disputed between Scitek and modem manufacturer Kirk Automation

The accountant in charge of the liquidation, Valentine and Co noted at the meeting that Keith Rose, director of Scitek claimed that the company had been continually thwarted by being supplied with faulty modems for sale and cash-flow problems

Rose also alleges that important confidential papers belonging to the company were misplaced from September 1986 This allegation has now formed the basis of a police complaint and is being investigated (see *Popular Computing Weekly* February 12)

## Internal hard discs for PCs

THE prices of hard discs continue to fall – a new internal 20Mb hard disc system from Kudos Systems for PC compatibles costs £343 85

The package comprises the hard disc, controller card, manual, utility disc and cables There is also a £19 95 charge for Kudos to install the system

Details on the HarDisk 20 from Kudos at 72 Capitol Way Edgware Road London NW9 0EW (01-200 6511)

## Software Hotlines

Work ground to a halt in the *Popular* office this week with the continuing saga of **Datasoft's** *Alternate Reality* the adventure game that contains every human activity except that of a specifically carnal nature

That's something that can't be said of **Mindscape's** latest Cinemaware release (via **Mirrorsoft**) *SDI* The screen burns with forbidden passion and global war – it says here on the box Phew, what a scorcher as *The Sun* would say and as for the cover artwork it leaves little to the imagination

Mirrorsoft will also be bringing more **Spectrum Holobyte** ST/Amiga product over later this year which include *Orbiter Falcon* and *PT 109* shuttle flight and torpedo boat simulators, respectively Plus, oh bliss oh rapture an American Football game Yo!

Talking of things American **Advance** have just picked up the European rights to those lovable characters, *Laurel & Hardy* (who incidentally, are known as Big & Little Reindeer in Scandinavia)

Anyway **Advance** has hired **Andy Wilson** to do the programming – the man responsible for the excellent Commodore 64 *Dan Dare*

The object of the game is to locate your other half and then assault them with a custard pie – in fact from the screen shot, I'd say it's going to come out a bit like *Spy vs Spy* although it may be none the worse for that Out initially on the 64 around late March/April

*Battle of the Go Bots*

More tie in news this time from **Ariolasoft** with *Battle of the Go-Bots* Considering the complete dog's dinner **US Gold** made of *He-Man* hopes were not high for this one but in fact the finished product isn't at all bad written by one **Tony Crowther**

Tony's borrowed an idea from his old mate **Jeff Minter** and used the dual gravity trick (pulls from both the bottom and top of the screen) to produce a polished smooth scrolling shooter Out soon on all major formats

After *Greyfell* (exclusively revealed to you through these pages a few weeks ago), **Starlight** will be pushing out two zappers one called *Dogfight 2187* the other *Deathscape* the former looking a bit like *Top Gun* in space the latter not

Finally it looks like being a quiet summer for **FTL/Gargoyle** releases **Greg Follis** says that they're unlikely to bring anything out until Septemberish, although they'll be continuing with contract stuff and some ongoing PCW/PC development work There will be a **Gargoyle** adventure out in time for Christmas though Did you hear that Santa?

**John Cook**

*Laurel and Hardy – another fine mess?*

# Apple's 'open Mac' revealed

AFTER several years of launching only one or two new products a year Apple is set to blitz the market with more than 30 new releases

The majority of the products are hardware and software additions to the Apple Talk networking system and include a controller card that will allow Mac owners to load data files from IBM compatible disc drives

More interesting are the new computers a replacement for the current Mac Plus, and the long awaited 'open Mac'

The first machine will be called the Mac SE (System Expandable) The major differences between it and the Plus are the addition of an extra internal disc drive bringing storage up to 1 6 megabytes a new keyboard much like that on the Apple IIGS and a slightly increased screen resolution

The machine also features a two speed 68000 processor and an alternative model substitutes a 20Mb internal hard disc for one of the floppy drives The SE should be available next month at a price of £2 400

The 'open Mac' has now been designated the Mac II, confirming that it is a true second-generation Macintosh

It features a full 32-bit processor the 68020 running at nearly 16mHz graphics and maths co-processors six board slots three of which can be used for video and memory expansion up to 128 megabytes and a new Apple operating system called A/UX a Unix hybrid

With a flat out speed of 5 mips (millions of instructions per second), it runs faster than the average minicomputer

The price paid for this specification is loss of compatibility with existing Mac software Apple claims 80 per cent compatibility, but hopes to get this up to 90 per cent

The Mac II comes with a 12 inch monochrome monitor but an add on board will give 16 colours and standard RGB output

Storage options are the same as for the Mac SE, and the starting price will be around £5 000

## Self-start utility for PCWs

CORNIX Software has come up with a self start utility for PCW owners using CP/M on the machine

*Universal Self Start* will automatically set the program to the user's desired parameters – full screen or 24 × 80 mode single sheet or tractor feed stationery print quality and pitch – and boot the main program up without any typed in commands

*Universal Self Start* costs £19 95 Details from Cornix at Spirella Building Bridge Road Letchworth Herts SG6 4ET 0462 682989

## Amstrad launches new DMP printer this week

AMSTRAD is launching two new peripherals for its PC1512 range at this week's *Which Computer?* show

The latest in the DMP printer range the DMP4000 will be on show The DMP4000 although targetted at the 1512 market is also compatible with any computer with a standard parallel printer output It will print at 200cps in standard mode and 50cps in NLQ mode It also has Ascii and IBM graphics character sets

The second add-on is a PC V21/23 modem, which contains hardware and software to enable the computer to be used as a telex machine Free membership to the Microlink electronic mail service is also included in the package

The printer costs £401 35 the modem £171 35

## HiSoft moves on 16-bit micros

HISOFT has released two more utilities for 68000 machines *Devpac Amiga* and *Saved!* a disc management utility for the Atari ST

*Devpac Amiga* is a conversion of its Atari ST counterpart and is a programming development system including editor assembler and debugger *Devpac ST* was used to write the arcade game *Starglider*

*Saved!* enables the user to run desktop functions from within Gem applications, such as recovering copying or deleting files

*Devpac Amiga* costs £59 95 *Saved!* £29 95 Details from HiSoft The Old School Greenfield, Bedford MK45 5DE (0525 718181)

## New Star printer

STAR Micronics has announced an addition to its N-range of dot matrix printers in the form of the NB24-15

The NB24 15 comes in at the top of the range with a letter quality mode printing at 72 cps Printing in draft mode is output at 216 cps The NB24-15 costs £759

Details from Star Micronics at Craven House 40 Uxbridge Road Ealing London W5 2BS 01-840 1800

## DIARY DATES

### FEBRUARY

17–20 February
**Which Computer? Show**
NEC Birmingham
**Details** Mainly business exhibitors
**Price** £5
**Organiser** Cahners Exhibitions 01-891 5051

### MARCH

20–22 March
**The Electron & BBC Micro User Show**
UMIST Manchester
**Details** Software hardware and peripherals for Acorn's micros
**Price** £3 adult £2 children £1 discount for advance booking
**Organiser** Database Exhibitions 061-456 8835

### APRIL

24–26 April
**The Atari Computer Show**
Novotel London W6
**Details** First chance for Atari to show off exciting new strategy
**Price** £3 adult £2 children £1 discount for advance booking
**Organiser** Database Exhibitions 061-456 8835

### MAY

2–3 May
**First Ideal Microcomputer Show**
Kensington Exhibition Centre
**Details** Software hardware peripherals for consumer users
**Price** TBA
**Organiser** RAMCO International Exhibitions 01 906 3363

8–10 May
**The Electron & BBC Micro User Show**
New Horticultural Hall London
**Details** Software hardware and peripherals for Acorn's micros
**Price** £3 adult £2 children, £1 discount for advance booking
**Organiser** Database Exhibitions 061-456 8835

Prices dates and venues of shows can vary and you are therefore strongly advised to check with the show organiser before attending *Popular Computing Weekly* cannot accept responsibility for any alterations to show arrangements made by the organiser

# Letters

## Bach to the future

Please may I use your pages to inform your readers of an interesting entertainment which I am now able to offer to Amstrad CPC (464 664 or 6128) owners who possess Rainbird s excellent *Advanced Music System* disc

I have transcribed all six of J S Bach s Brandenburg Concertos as files which may be loaded into the AMS Linker module and played straight away I feel that as a straightforward demonstration of the musical abilities of the Amstrad this disc performs well enough, but with the computer connected to a stereo hi-fi the effect is downright astonishing

If readers are interested they are invited to send me a formatted blank 3 inch disc plus a copying fee of just £2 00 inc p & p or I can supply the disc myself together with the Concertos for just £5 95 including the cost of the disc and p & p

I must stress that this is in no way a commercial venture I am merely very pleased with what I have done and would like to share it with as many fellow enthusiasts as possible

*Rob Baxter*
*50 Milton Grove*
*Whalley Range*
*Manchester M16 0BP*

## Fascinating – but flawed

In *Popular* February 5, you published a fascinating, instructive and useful Disc Menu program for the Amstrad CPC by Alistair Scott Unfortunately if one tries to select a program which includes a *Symbol After* statement such as in Sub-hunt (*Popular* April 24 1986) one gets an *Improper Argument* error Also colours can be wrong if the selected program relies on the default settings

Both these errors can be corrected by adding the following line to the Disc Menu program

235 CALL &BC02 CALL &BB4E

*Robert Dobbie*
*Ashford*
*Middx*

## Tandy? Just dandy

You reviewed the Tandy Model 102 portable in *Popular*, January 15 I bought a Model 100 just before it was superseded permit me to add some comments to your review

I think that the machine is best used in conjunction with a larger computer having discs and a better word processor I have a Spectrum Plus and use *Tasword Two*, Interface One and the TR Beta disc interface

I do most of my typing on the train (I commute between Oxford and London) and save the files to the Sinclair This means that I never have large files on the Tandy, and have had no problems with memory limitations I keep both my diary and a fairly long address list permanently in Ram without conflict

A bonus is the ability to run a program automatically on power up I ve made it into the London Marathon this year and every time I switch

Star Letter

## Counting the cost

The cost of software must be of major concern to all of your readers and has spawned hundreds of letters on the subject yet I have not seen many letters regarding the relative cost of the same program on different media I refer of course to the price differential between the cost of tape and disc-based programs

Working for the world s largest manufacturer of magnetic media I have a good insight into the cost of diskettes into the duplicator market and know that a diskette for the Commodore can be purchased and duplicated for well under £1 Actual cost will obviously depend on the quantities involved, but if any software house is paying over £1 for Commodore disc and duplication then I suggest it sacks the buyer

This begs the question, how do software houses justify increasing the price of software by £5 for diskette based versions? The increase often represents an increase of over 50% from the cassette based version, which appears even more unreasonable considering that in most cases universal packaging is used for both media types ensuring that no additional packing costs are incurred

Although I do not know the prices of cassettes and their duplication whatever the cost, it would reduce the price differential to less than £1

Although we must accept that the software houses should make a profit on this aspect of their operations, a minimum of 400% in the case of Commodore diskettes does seem excessive

This price differential must be dissuading owners from investing in the vastly superior diskette media, remaining with the old cassette based systems If the UK diskette system market were more established then this may encourage more US software houses to import their diskette only software, which I am sure you will agree can only be seen as good news of UK users

*Justin Thompson*
*Bedford*

# Puzzle

**Puzzle No 246**

They were selling off odd spools of ribbon down at the market and so we took the opportunity to buy a few Each spool was marked with the length of ribbon it contained in yards feet and inches One spool was particularly interesting as the length of ribbon as marked contained the same digits as there would have been if the length had been expressed in just inches

For example the length 4 yards 0 feet 0 inches is equal to 144 inches but here only one of the digits matches Slightly better is 4 yards 0 feet 1 inch since the value in inches 154 now has two matching digits

Can you determine the smallest possible length in which all the digits match when the length is expressed in the two different ways? (Of course the ribbon was longer than one yard!)

**Solution to Puzzle No 241**

The shortest total running time is six minutes and 57 seconds There are four different pairs of times for the individual sides of the record but the total time requested in the question is the same The times are 2 18 and 4 39 4 18 and 2 39 2 19 and 4 38 and 4 19 and 2 38

In the program loops S1 and M1 represent the seconds and minutes of side one of the record and S2 and M2 the corresponding timings of side two The total running time of both sides is computed in line 50 (in seconds) and this is then converted to minutes and seconds (M3 and S3)

Any timings greater than 9 59 are rejected in line 80 The six individual timings are then converted to string variables and are concatenated into a single string (T$) Two loops F and G then test this string for duplicated digits a flag (FL) being set if any are found Sets of timings without duplication are printed out From this list the shortest combined time can easily be found by inspection

```
10 FOR S1=12 TO 59
20 FOR M1=1 TO 8
30 FOR S2=12 TO 59
40 FOR M2=1 TO 8
50 SEC=M1*60+S1+M2*60+S2
60 M3=INT(SEC/60)
70 S3=SEC-(M3*60)
80 IF M3>9 THEN 160
90 T$=STR$(M1)+STR$(M2)+STR$(M3)
+STR$(S1)+STR$(S2)+STR$(S3)
100 IF LEN(T$)<>9 THEN 160
110 FL=0
120 FOR F=1 TO 8:FOR G=F+1 TO 9
130 IF MID$(T$,F,1)=MID$(T$,G,1)
THEN FL=1:G=9:F=8
140 NEXT:NEXT
150 IF FL=0 THEN PRINT M1;":";
S1;" ";M2;":";S2;" ";M3;":";S3
160 NEXT:NEXT:NEXT:NEXT
```

**Winner of Puzzle 241**

This week s winner is J J Malinowski of Market Rasen Lincolnshire who will receive £10

**Rules**

The closing date for Puzzle 246 is March 13 Answers should include a program listing if possible

on, the computer tells me how many days to go!

For anyone with the same combination of hardware and software a patch for *Tasword* is appended which allows loading of Tandy files directly into *Tasword*

*Peter Cameron*
*Oxford*

*That's for carrying the extras*

## Computer horror shock

Ever since the early days of microcomputing there have been many theories concerning violent games and their effect on people's minds as there has been with violent films

I think that most people, if asked a question like "what do you think excites the mind most a horror film or a computer game?", would undoubtedly answer "a horror film", on the basis of realism alone

Is it true to say that a computer game is harmless because its visual display is far from realistic? Or is it true that the very thoughts of what is happening on the monitor screen equal the effect of that which may appear on the cinema screen?

A friend of mine who has studied psychology tells me that current research emphasises a strong relationship between violent computer games and the casualness and triviality which seems to accompany death

This points out the main difference between games and films With a film you may witness a realistic death, but with a game you cause the death

Why are there games with violent concepts? There are several possibilities One is that the present attitudes in society help create violent games – or is it the violent games which create certain attitudes in society? By saying this I'm not suggesting it's too late to prevent any more damage being done if it is being done

My main aim in writing this is to help people have second thoughts about buying *Ikari Warriors* and just get *Little Computer People* instead!

*James Hannigan*
*Birmingham*

## Amstrads in Ireland

Could I tell your readers of the setting up of a club for Amstrad users in Ireland?

It will consist of the following

1) Monthly newsletter with latest news tips and listings 2) Free utility program every two months 3) Games and utility programs and hardware at a special discount for club members, 4) We will supply all the good utilities that are almost impossible to get in Ireland 5) We will be able to help CPC 6128 owners to get their games on to disc and 6) Eprom programming and blowing service provided

We believe it will be the only club in Ireland for Amstrad users and would like anyone who would be interested to write to me so that we will be able to put a price on the club membership when we can gauge the extent of the user base in Ireland which we believe to be very big and growing

*James R Cahill*
*17 Paire Mhuire*
*Ferns, Enniscorthy*
*Co Wexford*
*Ireland*

## With coin-ops like these . . .

I read in Software Hotlines (*Popular Computing Weekly*, February 5) that *Enduro Racer* will possibly be the best coin op conversion ever

Maybe you should take a look at the Konami Roms available on the MSX system before you make such rash statements

Look at *Nemesis* in particular, 128K of pure magic, and almost identical to the coin-op version

With *Salamander* in the pipeline for MSX *Enduro Racer* is going to find it tough to make the top three in coin-op conversions let alone number one

*Keith Neal*
*Bourne Lincs*

**John Cook replies: The unfair advantage I have over you, Keith, is that I've seen and played both of them.**

## . . . the MSX system is . . .

I refer to Mr Alston's letter in *Popular* January 29 MSX is *not a failure*!

To say that it has a tiny percentage of owners compared to other micros is a farce

Maybe Mr Alston is only looking at the UK where only 250 000 machines have been sold but MSX is the world's best selling micro

There are more companies behind MSX than any other system, although it has not taken off in the UK

*David Haslett*
*Preston*

## . . . not a failure

I am writing in reply to Keith Alston, about his so-called unbiased opinion of the MSX system

I own a Sony HB75B MSX computer and I am more than pleased with it

The system is by no means a failure there have been more than a quarter of a million sold in this country

As far as software goes, there are more than 200 games, 55 educational programs, 35 business programs and 21 utilities I personally would not call that a failure

Although I have seen other computers like Amstrad's and Commodore's with great sound and graphics, their Basic language is harder to learn than MSX Basic

*B Rapley*
*Manchester*

**That's enough MSX. Ed.**

## Game Two – bishop's move

Another close vote in Game Two of our Readers vs *Colossus Chess* tournament The Readers playing white narrowly elected to move the king's bishop from f1 to e2 (see diagram for details)

*Colossus*, playing black has replied by moving his remaining bishop

### On to move 12

Now we need your suggestions for the next Readers move Send your suggested move to either Inter Mediates (*Popular Chess*) Freepost Sawbridgeworth, Herts CM21 9YA (you do not need to use a stamp with this address) or *Popular* Chess Unit 2, The Maltings Sawbridgeworth Herts CM21 0PG (with a stamp) Please note that if you use Freepost your entries *must* be posted promptly Freepost is slower than paid for mail All entries must reach either address by Wednesday February 25

The move which gets the most votes will be entered into the game Results and *Colossus*'s response will be published in two weeks time

### Prizes

A British Museum reproduction Arran chess set will go to the person suggesting the most accepted moves at the end of the game Five copies of *Colossus Chess 4* (available for most popular micros) will go to the most consistent entrants for the duration of the game

*Next week, we return to Game One where the readers are playing black*

### Game Two

| | | |
|---|---|---|
| 1 | Pe2–e4 | Pc7–c5 |
| 2 | Ng1–f3 | Nb8–c6 |
| 3 | Pd2–d4 | Pc5xd4 |
| 4 | Nf3xd4 | Pe7–e5 |
| 5 | Nd4–b5 | Pa7–a6 |
| 6 | Nb5–d6+ | Bf8xd6 |
| 7 | Qd1xd6 | Qd8–f6 |
| 8 | Qd6–d1 | Ng8–e7 |
| 9 | Nb1–c3 | Pd7–d6 |
| 10 | Bc1–e3 | Ke8–g8 o–o |
| 11 | Bf1–e2 | Bc8–d7 |
| 12 | ? | |


A DEADLY ADVERSARY
...YOUR OWN MOTHERSHIP!
shadow skimmer
THE EDGE
"Nothing comes close"
48/128 Spectrum £7.95

# Smarten up your Commodore

*Chris Jenkins adds two new gadgets to the easily expanded 64*

Datel's range of hardware products for the Commodore 64 continues to add new dimensions to this remarkably expandable machine. Two of the latest devices make it possible to create your own cartridge software and make real use of the 64's cartridge port.

While extraordinarily convenient, especially in the case of heavily-used utility programs such as word processors and toolkits, software cartridges have always been too expensive to become really successful. Creating your own Eproms is even more uneconomical: a typical system like Sircal's Epilog costs around £150, and has many operating limitations.

Datel's Smartcart is an economical and relatively straightforward alternative which involves none of the complexities of Eprom makers and ultra-violet erasers.

The Smartcart is a pseudo Rom which features a low power CMOS memory with a life of about five years. The standard model is an 8K device (not an enormous capacity, admittedly) which is configured to operate from address *$8000*, just like commercial cartridges.

Programming is simple: just plug in the Smartcart with its switch down, power up, load your program at *$8000*, turn the switch up, and the cartridge will retain the program in memory. You can program the Smartcart to autoboot, or switch it out by addressing *$DF00*.

There's also a 32K version available, where four 8K blocks can be addressed, though you will need some knowledge of machine language to use bank switching to store a 32K program.

With a little knowledge of machine code, Smartcarts can be used to create your own library of often used programs, eliminating loading times and possible errors.

**The Datel Motherboard offers protection**

Ideally, you might also invest in the Datel 3-Slot Motherboard. This cuts down the effort and wear and tear involved in changing cartridges by providing three identical cartridge slots on a expander PCB.

Mounted on the back of the PCB is a metal support, and screwed into this is a restart switch. Selecting a cartridge is as easy as sliding the three way switch mounted on the side to the required position. Red LEDs on the other side of the PCB light up to indicate which cartridge is currently operating.

The Motherboard has an on board fuse to protect your 64, and is neatly engineered. Needless to say, if you have a selection of cartridges such as a toolkit, a Midi interface and a word processor, the Motherboard could save you hours of fiddling around while you would rather be working. A good deal all around.

**Program** *Smartcart/Motherboard* **Micros** Commodore 64/128 **Prices** £19.99/£18.99 **Supplier** Datel Electronics, Fenton Industrial Estate, Dewsbury Road, Fenton, Stoke-on-Trent, 0782 273815



# Ultramon offers control

About a year ago something unusual happened in the software industry – a program was released that redefined the standard of a commonplace computing tool: a program that was such an improvement over anything that had been seen previously that it was confidently expected to outsell all of the opposition.

OceanIQ, the utility label of software written by Oasis software, had produced *Lasergenius*, an assembler, disassembler and machine code monitor package that received universal acclaim. The monitor was particularly powerful in that it allowed you to go beyond the normal 'breakpoint' system and set extremely complex conditions which, when met, would trigger a break in the program or a slow running mode. It revolutionised error trapping.

Since then I have been forced to conclude that Z80 assemblers and associated utilities are extraordinarily easy to write and extraordinarily easy to unload on an unsuspecting public. There have been at least five such releases for the CPC, many from leading software houses, each of which has duplicated the boring features offered by a dozen others.

Congratulations then to Bubble Bus for producing the first new package that can match, or rather complement, *Lasergenius*.

*Ultramon* is fairly standard in its memory editing, disassembly and debugging features, although they are implemented in a pleasingly complete and flexible way. The program's greatest strength is that it offers outstanding control over the inner workings (of the Amstrad) hardware. It can handle Roms, Rams and Input/Output ports with ease. In particular, the program merges the facilities offered by a monitor and a disc editor and therefore becomes a hybrid that goes beyond the usefulness of either.

*Ultramon* seems specifically designed to cope with all of these little routines that, in the name of protection, software authors use to safeguard their code. For example it provides facilities for editing the directory of discs such that they autoboot when |CPM is typed (anyone who has bought a games disc recently will have seen a similar system). Alternatively you can choose to format only selected tracks of a disc at a time and even handle discs that have been formatted to hold 41 tracks instead of the normal 40.

Tape headers or data blocks can be read, edited or created from scratch. You even have the ability to read Spectrum format tapes on your CPC or tinker around creating entirely new and alien loading formats.

With this degree of control you do of course gain the ability to do wildly damaging things to your discs and tapes, but on the whole anyone with a reasonable understanding of machine code and who wants to learn to recreate the secrets of professional programmers should buy this program.

**Tony Kendle**

**Program** *Ultramon* **Micro** Amstrad CPC **Price** £14.95 (disc) **Supplier** Bubble Bus, 87 High Street, Tonbridge, Kent TN9 1RX



# The rating game

*Martin Bryant discusses the various ways of rating both human and computer chess players.*

There is an old saying that horse races are caused by differences of opinion The same thing could be said of almost any kind of competition and definitely it can be said of rating systems The obvious purpose of any rating system is to provide a ranking list

Chess tournament results provide tentative rankings but because individual performances vary from time to time a ranking list based on a single event would be unreliable Also it may be necessary to compare players who have never met in direct competition

About 20 years ago, the Hungarian born physicist Arpad E Elo developed in America the now worldwide ELO rating system Rating systems had been used before but suffered from faults in basic theory Elo s scientific rating theory has been proven sound and was first adopted in the USA and is now used in most countries worldwide

There are two other systems still in common use the Ingo system and the BCF (British Chess Federation) system BCF and ELO ratings can be converted with the following simple formula BCF x 8 + 600 = ELO

It would take too long to explain all the details of the ELO system here but if you are interested a very good book is *The Rating of Chessplayers Past & Present* by Arpad E Elo

The rating system basically has the following groups novices (below 1200) class D (1200–1400) class C (1400–1600) class B (1600–1800) class A (1800–2000) candidate masters experts (2000–2200), most national masters (2200–2400) most grandmasters most international masters (2400–2600), world championship contenders (above 2600)

The top ten human players in the world in July 1986 were as follows

| | | |
|---|---|---|
| 1) | Kasparov | 2740 |
| 2) | Karpov | 2705 |
| 3) | Yusopov | 2660 |
| 4) | Korchnoi | 2650 |
| 5) | Huebner | 2620 |
| 6) | Sokolov | 2620 |
| 7) | Spassky | 2620 |
| 8) | Timman | 2620 |
| 9) | Short | 2615 |
| 10) | Portisch | 2605 |

The top ten computer players are more difficult to agree on This is because computers don t play enough in rated tournament games They have achieved wins over masters and even grandmasters but these are usually one-offs

The new Fidelity 16MHz 68000 program beat International Master O Streues (2533) This is the highest rated player so far beaten by a computer in a serious tournament game However this does not mean the program could consistently hold its own at this level

In Sweden, a team of enthusiasts have built up a reliable list of micro-computer programs by playing thousands of games between them and also calibrating the results against rated human players The top four micro computer programs are

| | |
|---|---|
| 1) Mephisto Amsterdam 12MHz | 2017 |
| 2) Avant Garde | 1940 |
| 3) Conchess Plymate 6MHz | 1903 |
| 4) Excellence 4MHz | 1896 |

Some of the top mainframe programs that competed in the last Computer Chess World Championships in June 1986 achieved tournament ratings as follows

| | | |
|---|---|---|
| 1) | Sun Phoenix | 2318 |
| 2) | Hitech | 2303 |
| 3) | Cray Blitz | 2290 |
| 4) | Rebel | 2235 |
| 5) | Bebe | 2215 |

The dedicated chess machine Belle didn t compete last year but has a rating over 2200 Also Hitech has an official US Chess Federation rating of 2352

You can see that the gap between the playing level of the mainframes and the best micro programs is approximately the same as that between the mainframes and the humans and that both gaps are quite large It is also generally considered that the more highly rated you get the harder it is to get any higher Thus it would still seem a long time until computers will challenge Kasparov

*Martin Bryant is the author of Colossus Chess 4*

a b c d e f g h
8 7 6 5 4 3 2 1

See page 9 to join in the Readers vs *Colossus* tournament

*"The top ten computer players are more difficult to agree on, because computers don't play enough in rated tournament games"*

# Imagine that

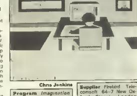
*Imagination* is by Incentive's Peter Torrence so I'd hazard a guess that it was written using the *Graphic Adventure Creator*. If so it's an impressive job the pictures are well up to standard for this sort of thing everything runs quickly and smoothly and there's a decent vocabulary and sense of intelligent responses.

The scenario should be familiar to most adventurers it takes place while sitting in front of your micro. There are four programs on your machine and each one launches you into a different mind voyage.

One game is a space adventure one a wartime romp one a spoof on *Lords of Midnight* and the last a *Manic Miner* jape. You can jump from one to another merely by pinching your arm to wake up and entering another game but you can take objects with you which may be needed to solve the ultimate question of the number of stars in the universe.

Should provide hours of fun at a bargain price.

**Popular Appeal** ◆ ◆ ◆



**Chris Jenkins**

**Program** *Imagination* **Micro** Spectrum, CBM64, Amstrad CPC **Price** £1 99

**Supplier** Firebird Telecomsoft 64–7 New Oxford Street, London WC1A 1PS

# Return to sender

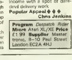
Visited as we are by a constant stream of helmeted mumbling bikers claiming that they have to pick up a parcel from someone whose name they don't know to deliver to a company the location of which they haven't been told we all found Mastertronic's *Despatch Rider* only too close to the truth.

This agreeable cheapie for the unjustly ignored Atari XL/XE micros, is low on graphic sophistication but high on playability. The main screen is divided into a map section, showing the area of your motorcyclist's work.

Nerve-racking fun which leads me to wonder whether programmer Tim Huntingdon has been supplementing his income with a spot of daredevil delivery work.

**Popular Appeal** ◆ ◆ ◆

**Chris Jenkins**



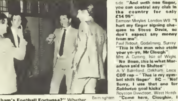
**Program** *Despatch Rider* **Micro** Atari XL/XE **Price** £1 99 **Supplier** Mastertronic, 8–10 Paul Street London EC2A 4HJ

# Over the moon, Brian

*And now, the winners of the Brian Clough caption competition . .*

We had a good chuckle sorting through your entries to our *Brian Clough's Football Fortunes* caption competition (*Popular Computing Weekly* January 15) and some difficulty picking the winners.

If you remember, we asked you to supply a caption in 20 words or less for the picture shown here of Brian Clough in discussion with representatives of the game's publisher CDS. Many entrants put our men on the left here in the role of referee while others went for topicality with some (often caustic) lines about Forest's untimely exit from the FA Cup.



## The winners

Ten captions were deemed worthy of the prize of a copy of *Brian Clough's Football Fortunes* with a copy signed by Clough himself going to the outright winner. The judges were unanimous in their decision over who should get the autographed program – step forward **David Mackie**, of Kilsyth Glasgow and thanks for ' **What do you mean, they've changed it to George Graham's Football Fortunes?"** Whether Brian Clough will *want* to sign your copy for that little gem is another matter.

The nine other winners are (in no particular order)

Geoff Ellis Torquay **"No, Mr Clough, one megabyte is not quite the same thing as a Norman Hunter tackle"**

Martin Owen Caernarvon **"When he picked up that final card, I was as sick as a parrot, Brian'**

A Pennington Huyton Merseyside **"And with one finger, you can control any club in the country for only £14 95"**

Eamonn Moyles London W8 **"I hurt my finger signing cheques to Steve Davis, so don't expect any money from me'**

Paul Ridout Godalming Surrey **"This is the man who stole your yo-yo, Mr Clough"**

Mrs A Cutting Isle of Wight **"No Brian, *this* is what Maradona said to Shilton"**

A V Balmford Oakham Leics **CDS rep – ' This is my symbol shift finger' BC – 'No! Sorry, I use that one for *Subbuteo* goal kicks'**

Royston Davidson West Heath Birmingham **"Come here, Cloughie, I want a word with you about a certain team called Crystal Palace '**

Mark Rayner Wembley Middlesex **' You think you're good! This finger has won the FA Cup *and* the league"**

Prizes will be on their way soon. Congratulations to all the winners and thanks to all the entrants.

# Culture shock

*Alternate Reality* is the name of the game – and you can t accuse Datasoft of not producing the goods on this one In what other role playing adventure must you eat, sleep drink earn a living go down the pub with your mates as well as carrying out the normal quest type stuff?

The scenario is nice – you ve been abducted by a flying saucer, and are set down in the main square of a strange city at six o clock in the morning No weapons no armour, flimsy clothing, with only your wits (if you have any) to protect you

Like all role playing games, you ve a range of attributes strength intelligence charm etc all given a rating – the higher the better

The method for generating a character is neat – numbers scroll through several windows, each representing an attribute at varying speeds rather like a complicated fruit machine You hit the space bar and the reels stop to reveal your final character

As you move around the city (which you view from a small window in the centre of the display) you encounter other inhabitants of the city – some hostile others not

You select your response from a menu – attack, trick, charm offer item leave or lunge – but if you want to stay alive long and not get a reputation as a villain it s best not to do anything too naughty

To add to the fun, it s all in real time, so you can t hang around deciding exactly what to do

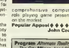
Your very first priority must be to buy some warm clothes and a compass (the latter being necessary for the mapping that is vital to success in the game) at one of the shops in the square – then get a job to earn enough money to stay the night at an inn Being out during the night is bad news

Jobs may be available at banks (where you may also keep your spare cash) taverns (where you ll get valuable information if you become a regular as well as food and drink) or inns

You get experience by surviving encounters with other life forms and as usual, the more experience you get, the greater the chances you ll survive

There s lots, lots more to it, we haven t visited any guilds yet (boo!) but on the other hand we haven t caught any diseases (hurray!) But for sure there s more to be getting on with than most adventures could hope for

The actual object of the game is to get used to the city and build up a character to enter the other modules (there are six planned) that plug into the system If these modules ever come out – and US Gold is expecting the first *Dungeon* soon – *Alternate Reality* could be the most comprehensive computer role playing game presently on the market



**Popular Appeal** ♦ ♦ ♦ ♦

**John Cook**

**Program** *Alternate Reality – The City* **Micro** Atari ST **Price** £24 99 **Supplier** Datasoft, via US Gold, 2–4 Holford Way Holford, Birmingham B6 7AX

# Future shock

*Shockway Rider* – the second release from the Gargoyle FTL (Faster Than Light) label has just arrived and the question on everyone s lips was Is it going to be as good as *Light force*? Well If the *Popular* games droids are anything to go by – the answer is a qualified yes

The game is set in the 21st century, and as FTL implicitly predicts by that time Heathrow Airport will have taken over the whole of London so to get anywhere, you ll have to ride on moving walkways scrolling horizontally left to right

Unfortunately, the future being what it is, these walkways are inhabited by gangs of hooligans (often disguised as grannies) who are out to make your journey as fatal as possible You defend yourself using well-timed blows, or by throwing bricks and the like that you can pick up as you speed along

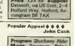
Survival is the name of the game, as you attempt to complete the eight sections of walkway from Northside to Boulevard, that encircle the city

The whole thing is in 3-D perspective – which works very nicely The three belts of the walkway move at different rates but as the belt you are currently travelling on is stationary relative to you, with each move, the others must get relatively faster/slower (think about it)

As a game *Rider* is fast responsive and immensely playable Not as gosh wow as *Lightforce*, but all the same it s more high quality original arcade action from FTL Spectrum out now Commodore 64 and Amstrad CPC to follow in March

**Popular Appeal** ♦ ♦ ♦ ♦

**John Cook**



**Program** *Shockway Rider* **Micro** Spectrum **Price** £7 65 **Supplier** FTL, Sedgley Road East, Tipton, West Midlands DY4 7UJ

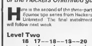


# The inexorable Equinox

*Tony Kendle brings you the second of three instalments of the Hackers Unlimited guide to Equinox*

Here is the second of the three-part *Equinox* tips series from Hackers Unlimited. The final instalment will follow next week

## Level Two




1 Get the credit in room 23. Pay the teleporter in room 20 and transport to room 30
2 Get the drill in room 29 and drill the blockage in room 17 (do not use the teleporter)
3 Get the credit in room 17 and pay the teleporter in room 26
4 Get the dynamite in room 18
5 Teleport from 26 to 27
6 Blast blockage in room 21 and get the credit there
7 Pay the teleporter in room 27
8 Get the radiation canister in 16 and teleport from 27 to 26
9 Teleport from 20 and deposit the canister in room 29
10 Get the spade in 25 and teleport from 26 back to 27
11 Dig the obstruction in 22 and get the level 3 pass in 28
12 Teleport from 27 back to 26 and go to room 23
13 Proceed to level 3

## Level Five

```
64--65  66--67
 |   |   |   |
68  69  70--71
 |   |   |   |
72--73  74--75
         |
76--77  78--79
```

1 Get the dynamite from 64 and blast the obstruction in 72
2 Get the teleporter credit from 65 and pay the teleporter in 64
3 Get the fuse in 66 and teleport from 64 to 79
4 Turn off the beam in 78 with the fuse
5 Get the teleporter credit from 70 and play the teleport in 74
6 Get the key from 71 and teleport from 74 to 77
7 Unlock the door in 77 and get the drill in 76
8 Teleport from 77 back to 74
9 Drill obstacle in 66 and get the radiation canister
10 Deposit the canister in 70
11 Get the spade in 78 and dig obstacle in 71
12 Get the drill in 75
13 Teleport from 79 back to 64
14 Drill the obstacle in 73 and get the level six pass
15 Go to 68
16 Proceed to level six

## Level Six

```
80--81              ----84--85
 |   |             |     |
82  83             |    85--87
 |                 |     |   |
 ------------------     88--89
                             |
                        90--91
                             |
                        92--93
                             |
                        94--95
```

1 Get the credit in 81 and pay the teleporter in 80
2 Get the dynamite in 83 and teleport from 80 to 86
3 Blast the blockage in 86
4 Get the radiation canister from 87 and deposit it in 83 (do not teleport)
5 Get the spade from 82
6 Teleport from 80 to 86
7 Get the credit from 85 (leave the spade) and pay the teleporter in 86
8 Get the drill in 84 and drill the obstacle in 80 (do not teleport)
9 Get the fuse and teleport from 80 to 86
10 Turn off beam in 88 and get the spade in 85
11 Get the credit from 92 (leave the spade) and pay the teleporter in 93
12 Get the dynamite in 91 and teleport from 93 to 94
13 Blast obstruction in 94
14 Get the spade from 92 and transport from 93 to 94
15 Dig the obstruction in 95 and get the level seven pass
16 Go to 81
17 Proceed to level seven

# Charts

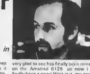
## Top Twenty

| | | | |
|---|---|---|---|
| 1 | (1) | Gauntlet | US Gold |
| 2 | (2) | 180 | Mastertronic |
| 3 | (8) | BMX Simulator | Code Masters |
| 4 | (3) | Paperboy | Elite |
| 5 | (7) | Footballer of the Year | Gremlin Graphics |
| 6 | (5) | Ninja | Mastertronic |
| 7 | (13) | Fist II | Melbourne House |
| 8 | (6) | Konami's Coin-op Hits | Imagine |
| 9 | (4) | Ollie and Lisa | Firebird |
| 10 | (18) | Agent X | Mastertronic |
| 11 | (12) | Hit Pack | Elite |
| 12 | (–) | Championship Wrestling | Epyx/US Gold |
| 13 | (19) | Jailbreak | Konami |
| 14 | (8) | Computer Hits Vol 3 | Beau Jolly |
| 15 | (11) | Trivial Pursuit | Domark |
| 16 | (10) | Space Harrier | Elite |
| 17 | (–) | Tenth Frame | US Gold |
| 18 | (–) | Hyperbowl | Mastertronic |
| 19 | (14) | Five Star Games | Beau Jolly |
| 20 | (–) | La Swat | Mastertronic |

All figures compiled by Gallup/Microscope

# Save an adventurer today

*Tony Bridge offers help to adventure-playing readers in distress*



I've had quite a few Adventure Helplines sent to me this week – they're not strictly my province, but let's see if we can save a few adventurers.

First off, Paul Lahill is playing *The Hitchhiker's Guide* on his IBM PC. "How do you get the babel fish?" he asks (and yes, I *have* covered this before, Paul!). But for you, let's go over it once more.

You need the fish to be able to understand all that garbage coming over the intercom (if you have consulted the guide, you'll find that the babel fish will allow you to hear any alien language in perfect English).

As you'll know by examining the dispensing machine, there is a source of babel fish in the vogon hold (by the way, just getting to see in the hold is quite a trick: when you first find yourself in this predicament, just input any old rubbish and watch the responses very carefully, particularly counting the number of senses unavailable to you. It's not the only time that this trick works, so keep it in mind for future use).

Back to the fish, and you'll naturally press the button on the dispensing machine. But Infocom and Douglas Adams are more devious than to allow you a prized object as easily as merely pushing a button! The fish comes out all right but sails across the room at knee level to disappear from view through a tiny hole in the opposite wall. Oh dear. But there is a hook just above the hole, so maybe you could hang something on the hook, thus covering the hole.

Trying it with Ford's towel doesn't, unfortunately, went to stay on the hook, so something else must be tried. At last the trusty dressing gown will come in handy!

So now the hole is covered up, try again. The babel fish isn't going to give up that easily, however – although it slides down the sleeve of the gown, it then falls to the floor, to disappear through a previously unseen drain! You'll find that the towel is quite large enough to cover the drain (you're right, the dressing gown *isn't*).

But, but ... as the fish lies there, a tiny cleaning robot whizzes across the floor and, pausing only to grab the fish, disappears through a panel in another wall. Is this fish *ever* going to give up?

Applying what we've learnt so far, we can safely assume that this panel can be covered up too. What else can we use? How about Ford's satchel? He's asleep now, so he won't mind if you prop it against the panel, and this works fine, except that now, wouldn't you just know it, a *second* robot zips in to gracefully catch the fish as it bounces off the satchel!

Something else is called for here — if you read that last description about the second robot, there's a germ of an idea there. Now, you *did* bring the junk mail with you, didn't you? I hope so, because that is what we need – just place it on top of the satchel, press the button one more time, and watch what happens. At last the babel fish is yours! Meanwhile, however, don't think that the vogon hold has given up all its secrets.

Now to *The Hobbit*, one of the adventures that crops up time and time again in the Adventure Helpline. Colin Lane from Australia is having trouble with the pale bulbous eyes – just return the way you came. Colin, type *Wait* twice, and then the directions again. As for the magic door, you must first of all *Wear Ring* and then *Examine Door*. You must then wait until something happens – when the door opens go NE immediately.

A more recent adventure is *Subsunk*, Peter Torrance's *Quill*'d game, and R Lawrence wants "any help" and also "where is acid to pour on hatch?" For the acid, examine the battery south of the switchboard – as for any help, you'll have to be a bit more specific!

P Wilson was asking for help a couple of weeks ago in *The Pawn* (which I'm very glad to see has finally been released on the Amstrad 6128, so now I can finally have a good blast at it, my original QL copy having gone the way of all bad media very early on!) – where's the key for the tree, and what does the guru want?

Well, the wooden key is to be found in the shed; to get into the shed you'll need the metal key found under the mat. *Always* look under mats in an adventure – for some reason there'll always be a key there – and as for floor boards, which you'll find in the tree, they, for another good reason which escapes me for the moment, always want to be moved.

As for the guru, well, he's holding a bowl and *you'll* need to get this from him initially, then go and fill it with snow and return it to him. Look in the stump in the forest after doing all this, and keep the rice from the bowl!

Finally, Mr M D Mursell writes to tell me that he has recently purchased Infocom's *Suspended* but was disappointed to find that, although the playing guide mentions a board, his copy of the game is patently board-less (although he does indeed have the playing counters). His shop tells him that the adventure does not come with one.

Well, Mr Mursell, you should go straight back to the shop and demand a new copy complete with playing board, which it certainly *should* contain, or your money back. *Suspended* is impossible to play without the board and the shop should be well aware of this.

## Adventure Helpline

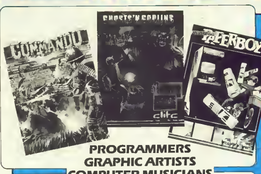
**Hitchhikers' Guide to the Galaxy on PCW8256** Screen door (plus any other hints welcomed). A D Cox, Fieldhead House, Leafy Grove, Keston, Kent BR2 6AH

**Mordon's Quest** East is a man-eating plant which we cannot kill, and NW is a pygmy who is eating his mother and offering her to us to eat, or it will have us for its next meal. We cannot kill him. Also we cannot get into the transporter although we can take it with us wherever we go. Mandy and Colin Ford, 73 The Fairway, Abbots Langley, Watford, Herts WD5 0JY

**The Adventure on Sinclair QL.** We cannot get past the snake, even though he is asleep, which was done by playing the flute. How do we get past him? Mandy and Colin Ford, 73 The Fairway, Abbots Langley, Watford, Herts WD5 0JY

**Lucifer's Realm on Commodore 64** On getting to hell, how do I get past the blue-tiled room (with distorted walls and a crack in the roof), without landing back on the narrow ledge (which is the first stopping point on entering hell). Andrew Metchick, 41 Eccleshall Road South, Sheffield 11 9PB




## PROGRAMMERS
## GRAPHIC ARTISTS
## COMPUTER MUSICIANS

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If you feel you have the right qualifications in the field of game design, programming, graphics or music for the Spectrum, CBM64, Amstrad or Atari ST please reply enclosing a CV to

Steve Wilcox
Elite Systems Ltd
Anchor House
Anchor Road
Aldridge
Walsall
WS9 8PW

# POPULAR Computing WEEKLY





# ADVENTURE GAMES

## INSIDE



From the earliest mainframe programs to the sophistication of Rainbird's text-and graphics packages, adventure games have fascinated many computer users. Is it the escapism, the mental challenge, or the thrill of completing a game?

Whichever it is, this supplement looks at the latest adventures from Rainbird, presents the biggest ever Tony Bridge hints-and-tips feature, brings you up to date with adventure news and fills you in on a few adventure related topics.

We also look at **Defender of the Crown**, the spectacular mediaeval simulation on the Amiga. Neither an adventure or a simulation, it should still appeal to your adventurous spirit!

Now GO DOWN and start adventuring! ◀

# Tony's megatips

### HELPFUL HINTS ON A HORDE OF ADVENTURES, COMPILED BY GRAND ELF TDNY BRIDGE

#### ▶ Adventureland

Get some mud to escape the chiggers. To unblock the window, drop the bladder and then use the flint and steel to create a disturbance! Shout at the bear to get the mirror.

#### ▶ Aftershock

TAKE CHAIR from office then EXAMINE LIFT. Now CLIMB ONTO CHAIR, REMOVE PANEL, CLIMB OUT OF LIFT. Get the Bottle from the litter bin and fill it with oil.

Later, FIT HANDLE ONTO SLUICEGATE, LUBRICATE MECHANISM, then OPEN SLUICEGATE. In the House EXAMINE STAIRS and then (yes, you must type it all exactly, crazy isn't it?) BRACE STAIRS WITH BEAM (from the Waste Ground). Try giving the buns to the Elephant (in fact, feed any animals you find), and examine the body of the Maintenance Foreman. To return to the roof of the house, JUMP ACROSS TO PARAPET, then CLIMB ONTO ROOF.

#### ▶ Bored of the Rings

Use the scissors to open the box. To escape from the Willow, CRY HELP. Drop the pepper by the gates of Morona.

#### ▶ Causes of Chaos

To get over the waterfall, wear the Barrel and then Enter the Water.

#### ▶ Circus

To start, get the shovel and dig in the field.

#### ▶ Colossal Adventure

To get the Platinum Pyramid, when in Y2 say 'PLUGH' to take you back to the building (listen for it!). Say 'PLUGH' again then 'PLOVER' to get to Plover room with lamp. When the spider is staring at the Pentacle, throw it off the Pinnacle.

#### ▶ Deadline

Read the pad by rubbing it with the pencil. Answer telephone, get Loblo from Dunbar's medicine cabinet and examine it - get the envelope from the lobby and show letter to Mrs Robner.

Say 'Show me roses' to McNabb, and then follow McNabb and examine the ground.

Analyse the porcelain. Go to the living room and wait for Duffy, read and show him the lab report then follow Dunbar. Next, take the ticket - however, don't show the ticket to Baxter.

#### ▶ Enthar 7

Pour the Poison in order to pass the plant in Section 5.

#### ▶ Erik The Viking

Nothing will get you through the final door! Isn't it amazing what female Vikings used to make their stew? Some objects when examined will have pictures on them.

The medallion will have a picture of your current position. If you have the ragbag, stand on the deck and RUB the object which has a picture on it - you'll then appear at that location.

Another method of moving about is to RUB the Silver Amulet (you'll appear back at the Ship). Al Kwasarmi will give you the task of getting objects which you must bring to him - in return he will give



you a Ribbon which must be used to tie up the Wolf

## Golden Baton

Don't try and swim the moat while holding the matches, they'll just get wet – instead, throw the matches before diving in To read the runes on the staff, wear the helmet from stable To take the Crystal, wave the Staff and say AKRYZ' To open the padlock, hold the mirror

## Gremlins

Watch the film Light the welding torch and cut the mail box into plates To finish, go to the swimming pool, drop everything and get Stripe out There's a bug here – you MUST drop welding equipment and pipe before you cut it otherwise you can't drop everything!

## Hampstead

To avoid arrest for indecent exposure – don tweeds in second-hand clothes shop Always wear bicycle clips Give brackets to man on train Examine the desk in the store Vote for 3 at the meeting The cocktail party is southeast from the wine bar in Covent Garden Buy a cottage Give Pippa's father the memo and the report

## Heroes of Karn

When you feel you're on a star remember the magic word Give the Barrow wight a bit of bible-bashing! Go to the castle, get thrown into the dungeon and bribe the guard The honey will send the bear to sleep, while the tinder box will ignite the marsh gas

You know what to do with the Frog, don't you? Kill the vampire to meet Haldir If the hole proves too small, give the job to someone else

## The Hitchhiker's Guide To The Galaxy

In holds wait until five senses become four (come to your senses!) The famous Babel Fish First, get the junk mail from your front door at the start of the game In the Vogon Hold, put the towel over the grate in the floor and the dressing gown on the hook Now get Ford's satchel, put it in front of the panel, and put the junk mail on top of satchel Then press the button and watch!

The glass case first throw switch – you'll then need to type the first word of the second verse of the Vogon Captain's poetry Just ENJOY POETRY to get the second verse The fluff find the flowerpot The screening door carry Tea and No-Tea (you'll need 200 points, ie, you must have been in the alternate Universe)

## The Hobbit

To escape the bulbous eyes, first wear the ring then travel east, when the creature is met, continue east then WAIT twice

## The Hulk

At the start, BITE LIP to get out of the chair! (And BITE LIP to change from Hulk to Banner and back again) There are three domes that appear at random, so go south until you find the dome containing the bees, go back out into the field and WAVE FAN to get rid of them

There are three gems to be found while you are here, so LIFT DOME and GET GEM – DIG, GO HOLE, DIG again until you find a gem

## Ice Station Zero

Guard a problem? PUSH CRATES To get rid of the bird, PLAY RECORDER To escape the native, HIDE IN FOSSILISED TREE

## Island of Xaan

To get past the second guard, try sending him to sleep!

## Kentilla

If the Statue halts your progress insert Rod Swing across the river Examine the Urgal Maul more than once Elva is good for carrying things You can't enter the Castle unless both Zelda and Timandra are still alive

## Knight's Quest

Two can sometimes do better than one! At the cliff, lower the rope and climb down

## Lord Of The Rings

At Farmer Maggot's farm, WAIT 3 times for the dogs, then all will be well Elfstones can be found in the Willow, at the top of a tree and in a plant pot To get past the Barrow-wight, WEAR RING, but examine junk first To get through the Gate, KNOCK ON HATCH, then say 'UNDERHILL'

Get Sam to kill Green Knight with Sword Follow Strider at all times! Get Merry to swim the lake Old Man Willow let Sam and Pippin be swallowed, but make sure one of them is carrying the matches Then BECOME the character with the matches and LIGHT MATCH then look around BECOME Frodo again and ask Tom for help Sam can kill Black Riders with his sword Don't forget to be friendly to the doors before the Mines of Moria.

## Mindshadow

To escape the ship, get the meat cleaver and cut the chain Talk to the derelict for the password Wear canvas to avoid the dart Think a lot!

## Mordon's Quest

Use the blanket to get across the quicksand Draw the outline of the jungle to find the answer to Tarzan's question Use the blowpipe to kill the pygmy To get past the waterfall sacrifice the Frog At the Admantium barrier just persevere! To escape the arena smoke the cigar

## Never Ending Story (Part One)

BLOW HORN to attract Falkor TAKE FALKOR when in possession of AURYN and he will stay with you To cross the desert, FLY SOUTH when you have Falkor with you To enter the tunnel in the mountains, LIGHT BRANCH at the campfire, then LIGHT THORNS at the tunnel entrance DROP CRYSTAL in the Strange Machine room to find out how to pass the Sphinxes

## Never Ending Story (Part Two)

At the start stay away from the Nothing! In the ruined building, REMOVE PLANKS to reveal the stairway To pass the Web, CUT WEB when you have the small knife To pass the Torturer, DROP COIN (found in the pouch), then go West to find the Golden Key Now you have the Golden Key, go back to the main gate of the city, then go South, East and you will find Auryn and Falkor TAKE AURYN and TAKE FALKOR and you will have finished this part of the adventure

## Never Ending Story (Part Three)

To enter the Tower, UNLOCK DOOR with the Golden Key, and to enter the door to the Empress's quarters SAY PLEASE To complete the adventure, be sure to be carrying AURYN when you meet the Empress

## The Odyssey

To build the boat look around and use all the wood you can find, don't forget to obey orders and Pray to the Gods!

## The Pawn

Give the note to the guards, and the chest to the adventurer In the Voting Booth, vote for Gringo Buy rations from John on the plain, and then give them and the lead to the Alchemists In the Store room cast a spell on the tomes The porter likes a little tipple!

## Quest For The Holy Grail

There's one key for one door Dig in the

muddy area Don t enter the cesspit and forget about the creaking sound and the 3 headed knight The wedge can stop doors from slamming shut Give the shrubbery to the Knight of Nic Don't forget the hat to go past Eugene Read the book with the piece of paper and Dictionary to get rid of the rabbit with the grenade Put the Holy Grail on the throne in the castle

## Red Moon

Wave the horseshoe at the blocked well To get past the Watchdog, put the pills in the meat Don't enter the room of mirrors!

## Return To Eden

To carry more objects eat the bean To cross the river, you ll need the stem and the tubers Imagine that the two platforms are a system of scales If you drop all, you can only pick up four items after this to overcome, wear the Fig Leaf in the tree tops and throw the flask at the Godfather (you're sure to get some credit!) Drop the Koala beside the statue

Give the credit card to the big robot and then pull the plug

## Robin Of Sherwood

Touchstone locations Up the holy tree of Herne, in the treasure chest in the castle bedroom, in the abbey with the nuns, with the Templars in castle de Belleme

## Seabase Delta

Blow bubble to wake hen The torch is useless Use the fork to short the switch in the corridor You'll need the ink from the sea creature to make the pen work to write on the pad to

## Sea of Zirun

To find case SWIM LEDGE To get the charm, talk to the sea elf To go back down hole, WEAR MEDALLION

## Secret Mission

Doesn t that map need a haircut?

## Snowball

If you re slipping on the ramp use the Cat. Get the sword from the forge, wear the leather gloves To open the safe TURN SAFE Wear the gas mask before opening the box To enter the secret cupboard, copy Alice! To get some light, throw the raisin

## Sorcerer

Give the coin to the Gnome in order to cross the bridge, but get it back when you return

## Spiderman

The Web Formula is in the painting in the Penthouse Gems are generally to be found upon the defeat of a villain or the performing of a task – however, there are also gems to be found in the CRIB, and in the DRAWER of the desk in the Penthouse Gems are also to be found in the tool niches in the elevator shaft To get to Penthouse, you must ENTER SHAFT and then GO UP until stopped Now PUSH UP

To defeat HYDRO MAN, set thermostat in Penthouse to its lowest level and he and aquarium will turn to ice Reset thermostat to original level and ice will melt POUR WATER. To defeat Lizardman, mix acid with calcium carbonate when in the Chem lab To defeat Ringmaster CLOSE EYES before entering his room and then PUSH KNOB TURN KNOB

To examine crib in peace, GO WALL before entering room (this way you don't stand in the sand), EXAM CRIB (twice!) TAKE GEM (ignore formula, it's American for baby s feed) To enable the printing press to operate, there needs to be a total weight of more than 950lbs on the scale To do this, deposit everything you can carry ie, couch, desk OCTO, ELECTRO, HYDRO MAN, CONNORS, painting etc EXAMINE DIAL if it reads more than 950lbs go to comp lab and TYPE START

To get Bio gem, stand outside the room it is in, then cast web at gem (it ll appear in the corridor) Get it early in the game – it disappears after you've destroyed the Ringman

## St Brides

To escape from jail, pretend to faint (you poor little female, how sexist!) If you need money, just pawn the pearl

## Terrormolinos

To find the camera and the suitcase, look around the kitchen and the garden very carefully Make sure that you secure the ladder before using it.

## Twin Kingdom Valley

To kill the dragon you need the wooden staff – it s behind the silver door in the desert king's castle To get the silver key, give the diamond to the forest king Now take the crystal ball to the witch and she will give you the bronze key This will open the bronze door in the short passage, which will release the Princess Make sure that the amulet is not in your holdall, or the Princess won't see it

To get the diamond ring, go east, east, east, east and down from the Hall of the Mountain King and then kill the dwarf (it'll take a lot of strength and quite some time) Although the master key is useful for any door, there are some secret doors which will only be revealed if you drink at Watersmeet

## Velnor's Lair

To cross the Lava hold the statue, say 'TIAMAT' and cross the bridge Put out the torch before going north into the swamp To pass the sharks, drop the armour, use the Trident, enter Pool, go East and Leave the pool Examine the rags to find the telescope

## Zork 1

The thief may be 'Egg' asperating at times, so why not give him some of your yolk to bear; it will pay dividends in the end To enter the tight crack, put torch in basket for a source of light, go through the mine and enter the crack You ll also need to put the coal and the screwdriver in the basket, as they come in useful when you confront a certain machine If you re stuck at the Dam, press the right button, examine the rubble and use the wrench Breaking a mirror will bring you bad luck so try rubbing it instead

## Zork 2

If you re feeling caged in tell your robot 'to lift it off your head Before releasing the serpent from the aquarium, take some of its water Use the place mat and opener to get the Blue Sphere

## Zork 3

If the guardians keep killing you then you need the vial And try saying Hello Sailor! Wait near the chest for the staff

## Warlord

To get started, Go East, Free Hare, West, Up, East, East, Get Acorn, Go North, Give Acorn to Raven Now Wear Torc Watch Torc in Swamp and heed its warnings! Items not needed are Pig, Skull, Silver, Vase, Chariot and Body When you first meet the Druid, who has the Amulet, read the script carefully When you get the Urn, don t drop it!

## Worm In Paradise

You ll get nothing from the robots if you don t have a shower from time to time

## Zzzz

To get the Bike, just PUSH or WHEEL it To beat Billy, use your Water Pistol Climb Tree to find release

**My grateful thanks to many subscribers to the Bridge Database, but especially John Wilson, Dennis Wilson and others for specific hints**




# Defence of the realm

IT'S NEITHER AN ADVENTURE NOR A SIMULATION, BUT CHRIS JENKINS FOUND MINDSCAPE'S DEFENDER OF THE CROWN AN EXPERIENCE NOT TO BE MISSED

**Defender of the Crown** isn't exactly an adventure, isn't exactly a strategy game, and certainly isn't a complex simulation of the "Age of Chivalry". So what's it doing in this supplement?

The answer is that it's great fun to play, and while it involves elements of arcade skill and strategic thought, it should appeal to adventurers because it evokes the era of "lusty wenches and black-hearted villains" so wonderfully.

With the Commodore Amiga, you expect marvellous graphics, and those Defender of the Crown has aplenty. From the opening titles, shimmering metal on a background of craggy stone, you know that this is going to be something special.

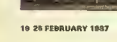
After the introduction, in which Robin of Sherwood explains that with the King dead and the Crown missing it is up to you to save the national, your first task is to choose a hero suitable for the job. There are four to choose from, all with chivalrous names and craggy features. Choose one with good swordfighting ability, this is much more important than the superficially more attractive jousing ability.

To start with, your hero has one plot of land, which provides him with a regular income and houses his home castle. The task is to take over all the other nobles' lands, using either your skills in the joust, or by accumulating enough money from conquests to build an overwhelming army.

On each turn you can choose to hold a tournament, build your army, study the map for threatening armies, launch a looting raid or try to conquer any section adjoining one of your own. Raids are carried out in the dead of knight, and involve much mouse-bashing as you try to cut down your opponents' thugs. There's more luck than skill in this bit, a lot depends on your swordplay rating rather than your prowess with the mouse.




If you win your way to the inner sanctum you will be rewarded with money, which can be spent on soldiers, knights and catapults. If you are called upon to rescue a Saxon maiden from the Normans, take the opportunity, if you win through, you will be rewarded by a loin-tingling wench unlacing your buskins, which does wonders for your image and improves your battles prowess.



Once you have won a maiden you can set forth, conquering other lands. It's best to move into some unoccupied territories first, to increase your income, you can then afford to buy a catapult and take a try at battering down some castles. Having achieved that, with a steady eye and a good aim, you must overcome the defenders, you can be beaten even if you have a larger army, so be prepared to select the "flee" option if things are going badly.

Although capturing an opponent's home castle wins you all his land, you can also gamble for landholdings in tournaments. There's a succession of wonderful graphics here, culminating with the sight of a heavily armoured knight bearing down on you as you try to steady your lance at his shield. Unhorse him and you win lands of fame, lose and you get a dent in the codpiece.

Random elements like Normans sabotaging your catapults, attacking your home castle or stealing your tax money can upset your plans, but you can call three times upon the help of Robin of Sherwood, who will lend men to help you defeat a difficult foe.

Capturing the whole kingdom and being presented with the crown is a real lump-in-the-throat experience. Unfortunately the combined team of Christopher "Longsword" Jenkins and the real power behind the throne, John "Front-de Bouef" Cook managed to complete the game in under half an hour. Mere mortals may take longer — maybe we're just cut out to be heroes.

Whatever the case, Defender of the Crown will appeal to everyone with a love of adventure and an appreciation of state-of-the art graphics. Don't go into it expecting a "mediaeval simulation", complete to the last crop report, plague and population density graph, and you won't be disappointed. Set firmly in the tradition of Errol Flynn films and Walter Scott novels, Defender of the Crown is an experience not to be missed ◀

# The land of Rainbird

**CHRIS JENKINS ON THE PCW PAWN, ST SILICON DREAMS, AND AMIGA KNIGHT ORC, ALL FROM ADVENTUROUS RAINBIRD**

Rainbird's presence in the adventure market is being consolidated with the release of more conversions of existing titles, and the promise of greater things yet to come

Perhaps most unusual of the conversions is the Amstrad PCW 8256 version of **The Pawn.** As most adventurers will know The Pawn is a quirky and sophisticated adventure with advanced graphics

The PCW version, of course, retains all the plot complexities and programming sophistication of the Amiga, Atari ST, and CBM64 versions, while the colourful graphics are represented in the Amstrad's glorious monochrome making the "grassy plain" look even grassier than usual

## Kerovnia

The PCW version comes on a single disc, and is packaged with a poster, PCW playing guide gameplay guide and novelette The obvious differences in the game are due to the PCW's operating system, the response speed is noticeably slower than other versions, and of course the graphics have lost something in the translation Having said that, the pictures are certainly better than anything else seen on the PCW, you have a choice of finishes, "stippled" or "dithered", and the overall effect, as you can see from the picture shown here, is impressive If you prefer you can switch the graphics off to improve the running speed

The full text editing system is retained, you can move or delete letters or whole words, move the cursor to the start or end of a line, or re-edit a mistyped command by recalling it with the COPY key The printer can be switched on to record the gameplay, and game position can be saved either to RAM disc or to floppy disc

The storyline, as most of you will be aware, deals with a period of social upheaval in the land of Kerovnia You become the unwitting pawn in a series of plots involving the Devil, the effete King Erik, the enigmatic sorcerer Kronos and numerous other characters, all of whom react in highly individual and 'intelligent" ways The Parser is so advanced that sentences such as pick up all the tools except the hoe and the rake place them in the wheelbarrow and open the shed door with the key in the pocket" can be acted upon with perfect accuracy, gone are the days of verb noun text entry

The Pawn is recommended for PCW owners, whether hardened adventurers or neophytes The Amstrad CPC6128 version, with, of course, full colour graphics, is also on the way

Rainbird's latest Level Nine release is the Atari ST version of **Silicon Dreams.** This trilogy of adventures, **Snowball, Return to Eden** and **The Worm in Paradise**, suffers like its predecessor **Jewels of Darkness**, from graphics which would look fine on a Quilled adventure on the Spectrum or CBM64 but are a positive insult on the ST Fortunately for more discerning adventurers, the games themselves easily outshine the graphics

Snowball involves special agent Kim Kimberley (any relation to Doc Smith's Kimball Kinnison?), in a battle to save the giant colonisation ship Snowball 9 and its hibernating passengers.

Return to Eden sees Kinnison, wrongly accused of sabotaging the ship, fighting intelligent robots and alien plantlife on the colony world Eden, while Worm in Paradise is set 100 years later when the supposedly perfect political/economic system of Eden has to be challenged, entailing you accumulating money and becoming a member of the ruling part of the strange city of Enoch

Silicon Dreams allows you to string together multiple commands using full stops between sentences You can also use "except', ' get all", oops" (to take back a move) and other time savers and there's a RAM save facility as well as the usual disc save

Excellent adventuring value at £19 95, and the Spectrum 48K version is still available on three cassettes at £14 95

Perhaps the most exciting news from Rainbird is the latest Level Nine adventure **Knight Orc,** initially released on the Amiga and Atari ST

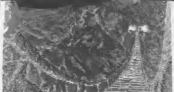
There are three parts to the adventure in which you play a down trodden orc in a human dominated universe You have to recruit four accomplices in your plan to gain revenge on the human oppressors

The game features character interaction and artificial intelligence, which allows you to issue orders to other characters and watch as they act in an independent manner High level commands, allowing you to move straight to a named location or follow a given character, are also included

The 1000 word vocabulary and advanced Parser allow complex linked command sentences, while the digitised graphics look like being the best since The Pawn

Knight Orc will be available at £19 95 for the Amiga and ST from March while Spectrum, CBM64, Amstrad CPC and PCW, Atari 800, Apple 2, IBM, MSX and Macintosh versions (Phew!) are promised

Rainbird's adventure catalogue is beginning to develop into a respectable challenge to the Infocoms of this world, it could well be that the company will soon be regarded as the world's best adventure software house ◀



*Rainbird's Amstrad PCW 8256 Pawn – stippled or dithered*




## GAC latest

Incentive's **Graphic Adventure Creator,** fast gaining ground on **The Quill** as most popular game generating system, has been enhanced by the release of a helpful handbook and planning pad

The Designer Pad has over 200 double sided A4 pages, and costs £7.35 plus £1 25 towards postage and packing Each side contains spaces to fill in room names and descriptions, local conditions, and connections to other rooms

The GAC Adventure Writers Handbook has around fifty pages of helpful hints on making the best of the system It includes sections on writing technique, how to use counters and location markers, how to differentiate between different kinds of the same object, saving memory with graphics, and so on There are sections for each different micro as well as general points

There are also two Medallion Graphic Adventure games available from Incentive Written using GAC, on the full range of micros, they are Peter Torrance's **Apache Gold,** featuring lonesome cowboy Luke Warme, and Tim Walsha and Simon Lipscombe's **Winter Wonderland,** set in the mysterious Himalayas

Contact Incentive Software, 2 Minerva House, Calleva Park, Aldermaston, Berkshire RG7 4QW, 07356 77288 ◀

## Imagine...

On the subject of Incentive's GAC, the latest Firebird Silver Range adventure, **Imagination,** was also written by Peter Torrance using that system

At only £1 99, Imagination could claim to be four adventures in one Set in your living room in front of your micro, it presents you with four game scenarios into which you can escape if your imagination is powerful enough One is a space adventure, one a wartime romp, the third a spoof of Lords of Midnight, and the last is set inside a Manic Miner type arcade game

You can move from one adventure to another by "pinching your arm" to wake up, but it's possible to carry objects from one scenario to another in your effort to discover how many stars there are in the universe

A good sense of humour and GAC's decent parser combine to make Imagination good adventuring value for money

Contact Firebird Software, Telecomsoft, 64 76 New Oxford Street, London WC1A 1PS, 01-379 6755 ◀

*Delta Four's latest venture is Abstract Concepts, a series of "serious" adventures in contrast to their popular spoofs. The first title, Enchantress will feature an improved parser and a high degree of character artificial intelligence*

## Budget ABS

Alpha-Omega's **Adventure Builder System** is a budget alternative to GAC or The Quill at £4 95 Designed for the Spectrum, it's a "compiled Basic" system which allows you easily to create programs which run at near machine-code speed

ABS comes with a 32-page booklet explaining the Basic program, the machine code core and the method of creating lists of verbs, nouns, locations and objects

Screen colours can be defined but to incorporate graphics you'll need the forthcoming Graphic Aid package at £2 50

The sample adventure included with ABS gives some idea of the strengths and limitations of the system, it will be interesting to see whether any adventure writers adopt it for writing commercial games

Contact Alpha Omega Software, CRL House, 9 King's Yard, Carpenter's Road, London E15 2HD, 01 985 6877 ◀

## Mysterious

Melbourne House's plans to release the adventure **Mystery of Arkham Manor** may be changed by the news of the Mastertronic takeover Featuring text, icons, pull down menus and animated graphics, the game places you in the role of a journalist investigating supernatural goings on in a quiet country village

Mystery of Arkham Manor allows you to file "reports" to your "editor", complete with "photographs" and "headlines" which can be printed out as you play

Release date is May, prices are £9 95 for CBM64 and £8 95 for Spectrum and Amstrad CPC

Contact Melbourne House, 60 High Street, Hampton Wick Kingston upon Thames, Surrey KT1 4DB ◀

## Chrome Dome

The latest Codemasters release is the text/graphics adventure **Necris Dome** Initially for the CBM 64, Necris Dome is set on an orbiting mausoleum manned by renegade robots Shipped aboard in a consignment of corpses, your task is to determine whether the androids have armed the Dome

The insert contains several clues about disabling androids using transporter units and completing the game which you might rather not read!

James Wilson's metallic graphics are suitably atmospheric, and do we detect the influence of GAC again? I think we do

Contact Codemasters, 1 Beaumont Business Centre, Beaumont Close, Banbury, Oxon OX16 7RT 0295 68426 ◀




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# Rockfall

Craig Davenport

Rockfall continues this week with more of listing 2. The controls for moving your man around are – *S* – up *X* – down – left – right *Q* – terminate life

The final section of the listing appears next week but if you would like a copy on cassette send £2.00 to Craig Davenport, 11 Kentchurch Close, Tupsley Hereford HR1 1QS

```
1000 REM****
1001 IFLE=15THENLE=1 SC=SC+600
1005 PRINT"[CLR]"
1010 FORI=1 TO 11 PRINT PRINT"  ". FORT=1 TO13
1020 A$=MID$ S$(LE,I),T,1)
1030 IFA$="R"THENPRINTR$
1040 IFA$="W"THENPRINTW$
1050 IFA$="G"THENPRINTG$,
1060 IFA$="D"THENPRINTD$
1080 NEXTT NEXTI
1090 PRINT PRINT"  ___!__________________________________"
1095 PRINT "  __________________________________"
1100 A$=MID$(STR$(SC),2,LEN(STR$(SC))) SC$=LEFT$("000000",6-LEN(A$))+A$
1110 PRINT"  "SPC(11)"SCORE " SC$;"          ",
TAB(3)"MEN" LI "  LEVEL " LE
1200 RETURN
1500 PRINT"[CLR]" POKE 53281 0 POKE 53280 0 POKE 646 1
1510 LL=10
1520 A$="        ROCK FALL BY CRAIG DAVENPORT 27 10 86.   "
1530 LE=LEN(A$) L=(40-LL)/2
1540 FOR A=1 TO LE FOR S=0 TO 75 NEXTS
1550 PRINT"        " TAB(L)
1560 PRINT MID$(A$,A,LL)
1570 FORB=1 TO 100 NEXT B A
1580 GET A$ IFA$="" THEN 1580
1590 IFA$=" "THEN RETURN
1600 RETURN
10000 REM DATA FOR SCREEN DESIGN R=ROCK D=DIAMOND W=WALL G=GROUND
10001 REM SCREEN 1
10010 DATAWGGGGGGGGGGGGGGGW WGGGWRRRRRRRRWGGGW
10011 DATAWGGGRDGGRDGGRDGGRW WWGGGWGGGGGWGRGGGW WGGGGGWGGDGGWGRGGGW
10012 DATAWGGRGGGWDRDWGGRGGGW,WGGDGRGDWWDGGRGRGW WRGGGRGWDDDWGGRGGGW
10013 DATAWGRGGGWGRGRGWGGGGGW,WGGDGWGRRRRRGWDGRGW
10014 DATAWGRGGGGGGDDGGRGGRGW
10019 REM SCREEN 2
10020 DATAWGWRRGRGGGGGGGGGGGW WGGDGGGGRGGRGGRRGGW WGGRGRGWWWWDDWWWWDW
10021 DATAWGGDGDWGGDGGRGRDGW WDGGGWGWDGRGRGGGWGW WGGGGWGWDWWGGWWGWGW
10022 DATAWRGRGWGWGWRGGRWDWRW,WRDRGWGWGWGGGWGWGW WGRGGWGWDWWGGWWGWGW
10023 DATAWGDGGRRGRWGWWGGGGGW,WGGGGRGGGGGGGGGGRGW
10024 REM SCREEN 3
```

```
10030 DATAW[illegible]RRGRGGDRGGRGW
10031 DATAW[illegible]DRG[illegible]RRG[illegible]RRW
10032 DATAW[illegible]WWWWDWWWDWWWGW
10033 DATAWR[illegible]GWW[illegible]W
10034 DATAW[illegible]G[illegible]RWGGDW
10035 DATAW[illegible]GRWGGGW
10036 DATAW[illegible]GR[illegible]GDW
10037 DATAW[illegible]WRDDW
10038 DATAW[illegible]DGRW
10039 DATAW[illegible]RRDRR[illegible]GW
10040 DATAW[illegible]RRRRRRRRRRWRGDW
10041 REM SCREEN 4
10050 DATAW[illegible]GGGGRGRW
10051 DATAW[illegible]WWWWWWRG[illegible]
10052 DATAW[illegible]RGRRRGGGDGDW
10053 DATAWR[illegible]GRPRGW
10054 DATAW[illegible]DGGDDGRDGW
10055 DATAW[illegible]GGDRRGDDGRWW
10056 DATAWRGW[illegible]RRRGGRWW
10057 DATAWG[illegible]WWWWWWWRRW
10058 DATAW[illegible]GRGGRR[illegible]DGRGGRRGW
10059 DATAW[illegible]GGR[illegible]DD[illegible]
10060 DATAW[illegible]GGGD[illegible]GGGDGW
10061 REM SCREEN 5
```

```
10070 DATAW[illegible]DRRG[illegible]GW
10071 DATAW[illegible]GRW
10072 DATAW[illegible]WWWWW[illegible]GRW
10073 DATAWG[illegible]DRGDG[illegible]W
10074 DATAW[illegible]DRGGW
10075 DATAW[illegible]WWWWWWWWRGGW
10076 DATAW[illegible]DDD[illegible]GRGGW
10077 DATAW[illegible]RR[illegible]GGGDGGW
10078 DATAW[illegible]WWWWWWWWWRGW
10079 DATAWRDRR[illegible]RRGGGG[illegible]
10080 DATAW[illegible]WWWWGDGWWW[illegible]GDGW
10081 REM SCREEN 6
10090 DATAWGGDRR[illegible]GGWWWGGGRRW
10091 DATAWGGRRR[illegible]GWWWGGRRW
10092 DATAW[illegible]RRR[illegible]WWDDDRGG[illegible]W
10093 DATAW[illegible]GR[illegible]DGD[illegible]GGGW
10094 DATAWGGR[illegible]WWWWWWWGGW
10095 DATAW[illegible]DDDG[illegible]GDDDG[illegible]GW
10096 DATAWGGG[illegible]WWWWWWWGGW
10097 DATAW[illegible]RGR[illegible]GGGGRGRW
10098 DATAWRDRGR[illegible]GGGRRGRW
10099 DATAWRDRGRWDRRRRRRGRW
10100 DATAWRRGGW[illegible]GGGGGGW
```

# PMDump

David Gristwood

Any programmer who uses C or assembler will come across sooner rather than later the bombs. Even if you don't understand the cause, at least the symptoms are clear. The program suddenly halts and a number of little bombs appear on the centre line of the screen. At this point either Gem returns to the desktop or the machine hangs and can only be restarted by pressing the reset switch. At this point PMDump should be run. The program will display one screenful of information detailing the cause of the problem then wait for any key to be pressed before returning to the desktop.

When the 68000 processor has to deal with an unexpected situation it generates what is known as an exception. Such situations might include a character arriving at a serial port or an attempt to access protected memory. When the ST is first switched on all the exceptions that don't have a special routine associated with them are set to point to the bomb handler. This is a general purpose error handler which aborts the program, and indicates the type of exception by the number of bombs drawn. The handler also stores diagnostic information which PMDump picks up, analyses and displays.

PMDump should display enough information for the user to determine the cause of the error. The key to this can usually be found in the exception type. If this in itself is not sufficient, the contents of the registers and the stack provide further information. In the special case of addressing errors the stack contains a snap shot of the 68000 at the moment the error occurred, and PMDump displays all this information.

The most common exception for C programs is that of attempting to access protected or non existent memory through an invalid pointer. PMDump indicates the point at which the error occurred (the Program Counter) as well as the actual address of the pointer. Auxiliary information includes whether the cycle was Read or Write and if the program was in User or Supervisor mode.

PMDump was written using version 3.03.04 of the Lattice C compiler from Metacomco. Use any text editor to enter the program exactly as shown, including all comments, then save it as PMDump.C. Compile and link the source file with the default settings.

The second part of this listing will be printed next week. Should anyone not wish to type the listing in or if they don't have a C compiler then send £5 to David Gristwood, 3 Bells Vue Drive, Sunderland, Tyne & Wear SR2 7SF for a copy on disc.

```
#include    "osbind.h"
#include    "stdio.h"
#include    "fcntl.h"
#include    "ctype.h"


#define     SUCCESS         0               /* success return code */
#define     ERROR           (-1)            /* error return code */

#define     TRUE            1               /* boolean true state */
#define     FALSE           0               /* boolean false state */

#define     ON              1               /* boolean true state */
#define     OFF             0               /* boolean false state */

#define     ESC             27              /* ASCII escape code */

#define     TWIDTH          80              /* text screen width */
#define     TDEPTH          25              /* text screen depth */

#define     MAGICNUMBER     0x12345678      /* pm dump lives */

#define     DESCLEN         50              /* max description length */


typedef     unsigned char   byte;
typedef     int             boolean;


byte        *version = "1.0";               /* version # */

unsigned    d[8], a[7], sp[2];              /* 32 bit registers */
unsigned short stk[16];                     /* 16 bit stack words */

unsigned    errno = 0;                      /* exception # */
byte        errtypes[][DESCLEN] =           /* exception descriptions */
            {
                "Unknown exception type",
                "BUSERR (nonexistent memory)",
                "Address (boundary) error",
                "Illegal instruction",
                "Zero divide",
                "CHK instruction",
                "TRAPV instruction",
                "Privilege violation",
                "TRACE",
                "Line 1010 emulator",
                "Line 1111 emulator",
                "Unassigned (reserved) interrupt",
                "Uninitialised interrupt",
                "Spurious interrupt",
                "Autovectors",
                "Instruction vectors",
                "User  interrupt"
            };


/**************************************************/
/* main ()                                        */
/**************************************************/
main()
{
    boolean     loadpmdump();

    /* load the post mortem dump area, then show it */
    /************************************************/

    showinit();

    if (loadpmdump() == TRUE)
        showpmdump();   /* show information */
    else
        shownothing();  /* there has been no post mortem dump */

    /* wait for key to exit */
    /************************/

    getch();
}


/**************************************************/
/* loadpmdump ()                                  */
/*    If an exception has taken place, load the   */
/*    information from the post mortem dump.      */
/*    Return dump status.                         */
/*                                                */
/*    $0380            $12345678 if valid dump    */
/*    $0384  $03A3     saved D0-D7                */
/*    $03A4 - $03C3    saved A0-A6 + SSP          */
/*    $03C4            exception #                */
/*    $03C8            USP                        */
/*    $03CC  $03EB     stack dump                 */
/**************************************************/
boolean     loadpmdump()
{
    long        oldssp;
    unsigned    i;
```

```
        /* enter supervisor mode */
        /*************************/

        oldssp = Super((long) NULL);

        /* check for valid pm dump */
        /***************************/

        if (*((long *) 0x380) != MAGICNUMBER)
        {

                /* no post mortem dump */
                /***********************/

                Super(oldssp);  /* exit from supervisor mode */
                return FALSE;
        }

        /* load data registers */
        /***********************/

        for (u = 0;  u < 8;  u++)
                d[u] = *((long *) 0x384 + u);

        /* load address registers */
        /**************************/

        for (u = 0;  u < 7;  u++)
                a[u] = *((long *) 0x3A4 + u);

        /* load stack pointers */
        /***********************/

        sp[0] = *((long *) 0x3C0);  /* SSP */
        sp[1] = *((long *) 0x3C8);  /* USP */

        /* load exception # */
        /********************/

        excno = *((byte *) 0x3C4);

        /* load stack dump */
        /*******************/

        for (u = 0;  u < 16;  u++)
                stk[u] = *((unsigned short *) 0x3CC + u);

        /* exit supervisor mode */
        /************************/

        Super(oldssp);

        return TRUE;
}


/************************************************/
/* showtitle ()                                 */
/*      Show the title for the post mortem dump */
/************************************************/
showtitle()
{
        /* print title information message */
        /***********************************/

        printcls();

        printat(16, 1);
        printf(" POST MORTEM INFORMATION DUMP Version %s \n", version);
        printat(16, 2);
        printf("Copyright (C) David Greatwood and");
        printat(30, 3);
        printf("Bytime Software Limited 1986");
}


/************************************************/
/* showpmdump ()                                */
/*      Show the information obtained from the  */
/*      post mortem dump area                   */
/************************************************
showpmdump()
{
        unsigned    no2type();

        unsigned    exctype, u, v, x, y;

        /* print exception information */
        /*******************************/

        exctype = no2type(excno);
        x = (TWIDTH - (24 + strlen(exctypes[exctype]))) / 2;

        printat(x, 5);
        printf("*** Exception #%-x   %s  ***", excno, exctypes[exctype]);

        /* print data registers */
        /************************/

        printat(0, 8);
        printf("    "); printrvs(ON);
        printf("              DATA REGISTERS              \n");
        printrvs(OFF);
        printf("    D0-D3 %08x %08x %08x %08x \n", d[0], d[1], d[2], d[3]);
        printf("    D4-D7 %08x %08x %08x %08x \n", d[4], d[5], d[6], d[7]);

        /* print address registers */
        /***************************/

        printat(0, 17);
        printf("    "); printrvs(ON);
        printf("            ADDRESS REGISTERS            \n");
        printrvs(OFF);
        printf("    A0-A3 %08x %08x %08x %08x \n", a[0], a[1], a[2], a[3]);
        printf("    A4-A6 %08x %08x %08x      \n", a[4], a[5], a[6]);

        /* print stack pointers */
        /************************/

        printat(0, 28);
        printf("    "); printrvs(ON);
        printf("    STACK POINTERS      \n");
        printrvs(OFF);
        printf("    SSP %08x  USP %08x \n", sp[0], sp[1]);

        /* print stack dump */
        /********************/

        y = 8;
        printat(51, y);
        printrvs(ON);
        printf("    STACK DUMP     \n");
        printrvs(OFF);
        for (u = 0, y++;  u < 16;  u += 4, y++)
        {
                printat(50, y);

                for (v = 0;  v < 4;  v++)
                        printf(" %04x", stk[u + v]);
        }

        /* examine stack when address bad errors */
        /*****************************************/


        if (excno == 2 || excno == 3)
        {
                unsigned    mode  addr;

                y = 15;
                printat(51, y++);
                printrvs(ON);
                printf(" ADDRESS BUS ERROR \n");
                printrvs(OFF);
```

# Globes

*T N Richardson*

Here is routine for the BBC/Electron which will draw globe shapes. In the procedure, *A*, *B* is the globe's central position on screen, *X* and *Y* are the radius of globes, *ST* are the steps between lines

```
>
10MODE0
20PROCGLOBE(640,512,300,300,50)
30PROCGLOBE(200,200,200,100,25)
40PROCGLOBE(1000,200,200,100,25)
50END
60DEFPROCGLOBE(A,B,X,Y,ST)
70VDU29,A,B;
80M=X:M1=Y
90FORX=M TO 0 STEP-ST
100PROCCIRC
110NEXT
120X=M
130FORY=M1 TO 0 STEP-ST
140PROCCIRC
150NEXT
160ENDPROC
170DEFPROCCIRC
180MOVE SIN(0.2)*X,COS(0.2)*Y
190FOR ANG=0 TO 6.4 STEP0.2
200DRAW SIN(ANG)*X,COS(ANG)*Y
210 NEXT:ENDPROC
```

# Stopwatch

*Simon Webb*

This is a short procedure to give the Psion Organiser II a stopwatch. Pressing *S* starts stops and resets the timer while *Esc* and then *Q* exit the routine

```
ST:P
LOCAL KS(1),P,MIN,SEC
POKEW $20CD,3600  AT
6,2 .PRINT "00 00"
START
BEEP 50,100
IF GETS <>"S"
POKEW $20CD,300 :RETURN
ENDIF
POKEW $20CB,0  BEEP 50,100
LOOP
P=(PEEKB($20CB)
*256+PEEKB($20CC))/20
MIN=INTF(P/60)
SEC=(P-(MIN*60))/100
AT (6-(MIN<10)),2  PRINT
FIX$(MIN+SEC,2,
(-5-(MIN<10)))
IF KEY$="S"
GOTO START
ENDIF
GOTO LOOP
```

# Border Disabler

*David Baille*

This short routine for the Commodore 64 sets up an IRQ interrupt which disables the top and bottom borders allowing you to position sprites within them

```
100 FORT=49152TO49220
110 READA
120 POKET,A
130 NEXTT
140 POKE16362,0
150 SYS49152
160 END
1000 DATA120 169 21 141 20 3,162,192
1001 DATA141,21 3 169 129 141 26 208
1002 DATA169,127,141 13,220 36 171,17
1003 DATA208 3,16 141 17 203 36,173
1004 DATA19,206 201 250 240 17,169 27
1005 DATA141,17 208,169,250,141,18
1006 DATA208 76,61 192,169 19,141 17
1007 DATA208,169 51 141,13,206 169
1006 DATA1 141,25 208 76,49,214
```

# Programming Spotlight — Singlestep

Programming Spotlight is where long programs are featured and offered for sale to you the reader by the author This week is your second chance to send for Singlestep Next week we will be offering a new program Programs featured in this spot become the copyright of *Popular* as usual Also we pay the nominal sum of £10

*R M Wilkinson*

This handy Spectrum utility enables the user to step through a machine code program one instruction at a time, examining the results, the various registers and memory locations, changing them if necessary All 102 undocumented op-codes are handled and single registers are also represented in binary

For a copy of Singlestep and full working instructions send £2 75 to R M Wilkinson, Programming Spotlight, Popular Computing Weekly 12–13 Little Newport Street, London WC2H 7PP

**with Kenn Garroch**

## Trying to connect

*R Miller of East Kilbride Glasgow, writes*

**Q I have two Commodore Plus 4 computers, a 1551 disc drive, a MPS 803 printer, and two Philips 8502 monitors. I am trying to connect the machines together using the User/RS232 ports, so that I can access the same disc drive, cassette deck, etc, from both computers.**

**Unfortunately, I have had no success so far; I find it very hard to get information from anywhere regarding the interfacing of two Plus 4s, and you are my last hope**

**The bits and pieces that I already have are two User port plus, and one metre of 10 core screened cable and have tried connecting them together I have tried several programs to make them communicate but no way will they talk to each other I have also tried a three line interface but again with no success**

A The problem with this is that I know little about the Plus 4 However from the information you have sent me I think that you may have your wires crossed The problem with the Commodore RS232s is that they work on non standard voltages The RS232 standard quotes signal levels of ±12 volts as a maximum with ±3 being the minimum Commodore RS232 works at 0 and 5 volts This may be the problem but before you give up try the following connections

| Plus 4/A | Plus 4/B |
|---|---|
| TX | RX |
| RX | TX |
| RTS | CTS |
| CTS | RTS |
| GND | GND |
| Sig GND | Sig GND |
| **Both machines** | |
| DTR | Leave unconnected |
| RI | +5 volts or 0 volts |
| DCD | +5 volts or 0 volts |
| DSR | +5 volts or 0 volts |

The reason for tying DCD, RI, etc to 5 or 0 volts is that although they are unnecessary to the transmission of data as such they need to be one or the other (I m not absolutely sure which but there are only eight possibilities) to inform the machine that everything is connected

The programs you supplied (not reproduced here) look OK with the silent terminal being the easiest to test things with If you have no joy from the above arrangement you may be able to buy two proper RS232 interfaces for the Plus 4 which will certainly work, but will cost more money

## Torn between two machines

*P Hill of Wakefield W Yorks writes*

**Q I am considering buying a 68000-based micro to, hopefully, learn programming My problem is that I have two choices, I either buy the Atari STFM with b/w monitor and Computer Concepts fast Basic Rom which would cost £580, or I wait and buy the forthcoming £500 Amiga (which I believe has a better Basic) and a b/w monitor which will cost about £650 Which would you advise?**

**I will also want to play games on the computer I did consider buying the Amstrad 6128, but for not much extra I can get a 68000-based micro. Finally, are there any good books on 68000 assembly language programming you could recommend?**

A In a number of ways the Amiga is the better machine but if you are going to learn 68000 machine code the ST is far more open and easier to program Its architecture is less sophisticated so you would have to program more functions than the Amiga but the Amiga can be very complex in some ways

Secondly you may have to wait a long time for the Amiga since Commodore has still not confirmed UK launch and release dates The trouble with waiting to buy a micro is that by the time it appears there may well be a new dream micro around the corner

As far as games go (and I know people will moan about this) the ST is the better machine *at the moment* especially in this country Because there are more of them around the software houses are producing more games than they do for the Amiga especially as Commodore, the manufacturer, is currently promoting the business uses of the machine

Good books about the 68000 are almost non existent, and the best way to learn programming is to get your brain dirty and do it A book that will explain the functions of all the instructions is *68000 Assembly Language Programming* by Gerry Kane Doug Hawkins and Lance Leventhal published by Osbourn/McGraw Hill (34 Dover Street London W1)

## Bright bands of light on Amstrad

*Paul McLean, of South Shields Tyne and Wear writes*

**Q I hope you can help me with a problem that has occurred during the recent cold snap Every few minutes my Amstrad 128 keeps crashing It very much looks like a voltage spike as the printer also resets Could the recent cold have affected the mains supply?**

**I think one of these voltage spikes has caused some damage to the monitor as a bright green band of colour has appeared right along the top and to the left hand side of the display Text and graphics appear as they should but the band of colour is always there Has the fault occurred in the computer (which works as it should) or the monitor?**

A The recent cold weather should not have affected your computer at all unless it was damp and something inside froze (pretty unlikely) However, it does sound as though there is something wrong with the monitor and, since the power supply is in the monitor the same problem may be causing your computer to crash

The fact that the printer resets may mean nothing since the lines from the computer will have bounced up and down during power loss causing unusual signals to be sent It is possible that power surges over the mains supply could cause your computer to crash but I have experienced no problems and there have definitely been fluctuations with the electricity supply in parts of London

If your computer is still crashing now that the cold is retreating there is something wrong with the power supply in the monitor and there is nothing for it but to get it fixed Third parties will do this probably faster than Amstrad but will charge you (but then so will Amstrad if you are out of warranty)

Try disconnecting the power supply from the monitor to the computer and see if the colour band is still there If it is then the monitor is definitely at fault You may try turning the brightness control up full for a moment and see if that gets rid of it the phosphors in the tube may have become overexcited

Mains power fluctuations cannot damage your computer neither can the cold and I have heard rumours that Amstrad monitors are not all that reliable It looks as though you will have to challenge Amstrad on this one If it s under warranty try getting it exchanged for a new one

# This is the modem world

*Ben Knox concludes his two-part investigation of international communications*

Last week I looked at Compuserve, the largest American computer system. There are a number of other systems in the States, which offer different facilities and sometimes lower prices.

The Source is the second largest information utility. Like Compuserve, it uses scrolling text for its display format.

It also has many of the same facilities which I covered last week: special interest groups, a CB simulator and uploading and downloading of programs.

In addition to these, there is a conferencing facility called 'Parti' (which is short for 'Participate').

Parti is like the messaging facility on Bulletin Boards, except it is much bigger. It works on a tree structure. There are main topics (main branches), sub-topics (branches coming off the main branches) and sub topics of sub-topics (branches coming off the branches which come off the main branches!)

For example, if you look under the main topic called 'Computers', you would find sub-topics of 'Apple', 'IBM' and so on. Looking under the sub-topic 'IBM', you would find further sub-topics like 'IBM Hardware' and 'IBM Software'.

Once you have found the sub-topic which covers your particular interest, you can read and write messages.

If you cannot find a suitable heading for your message, you can create another sub-topic (branch) yourself.

The tree-structure makes it relatively easy to find specific items of interest, but is not really designed for browsing with no particular purpose.

If you want to be kept informed of the goings on under a particular main topic, or sub-topic, you can use the 'Join' feature.

After you join a topic, a special mailbox is created for you under your Parti name. Then whenever you access Parti by typing in your name, you will be able to read all the new messages without having to work through all the topics again, or having to remember which message you got up to last time.

Another feature of The Source is that you can use the Kermit file transfer protocol to up- and download programs from its special interest groups (SIGs). The Kermit protocol works a lot faster than the more common Xmodem protocol. Of course you need to be using software which can support Kermit file transfers, but such programs are readily available for little cost for most micros.

In fact, if you have IBM compatible, you can download a Kermit communications program for free (except for online time charges) using your current software, if it can manage Xmodem.

The Source has an electronic mail system called SourceMail. If you have ever used Telecom Gold here in Britain, you will recognise SourceMail, as the two systems both use the same software.

In fact, The Source runs on the same computers as Telecom Gold: Primes.

> *"If the prices of the 'big boys' are too much, then you might take a look at some of the smaller services which are appearing on the other side of the Atlantic which have much lower standard rates and may provide special offers"*

Users of Telecom Gold will, therefore, find The Source fairly easy to use when they first log on.

In addition to the above-mentioned features, The Source provides access to newswires, databases covering all interests, and a very good weekly computer magazine called Newsbytes. The British communications expert, Steve Gold, writes the European news for the magazine.

The Source costs $50 (about £35) to register and connect time is charged at between $6 and $12 (£4–£9) per hour, depending on the time of access. On top of these charges, British users have to pay for communications between the UK and the US via PSS. For further information contact Source Telecomputing Corporation, 1616 Anderson Road, Mclean, Virginia 22102 USA (Telephone 0101 (703) 734 7500).

You will by now realise that international communications is an expensive business!

If the prices of the 'big boys' are too much, then you might take a look at some of the smaller services which are appearing on the other side of the Atlantic. As well as having much lower standard rates than the larger services, these smaller ones may provide special offers to users from outside the US.

You might wonder why these systems would bother providing cheaper access for foreign users. It is mainly done in the name of publicity – if they have users from Europe, they can truthfully call themselves international services.

One of the more popular services amongst UK users is called People Link – often shortened to Plink.

Plink was started by a user of Compuserve who felt that the charges on that system were far too high for what was being offered. The charges for Plink are $4.95 (around £3.75) per hour for non prime time access.

If you choose your log-on times carefully, you can get even lower rates. Plink operates Happy Hours, usually in the evening. During a Happy Hour (which usually lasts for longer than an hour) the rates are reduced.

Plink offers two main services: PartyLine and Clubs. PartyLine is equivalent to Compuserve's CB simulator: users can type messages to each other in real time. Like the Compuserve system, there are a large number of channels and it is possible to enter a private talk mode where you can chat to another user without anyone else seeing what messages you are sending to each other.

Under Clubs, you find the special interest groups. These are less oriented towards computers and more towards general non-technical interests. Because Plink is so small, it can cater for more minority interests than Compuserve and The Source.

People Link costs $15.00 (£10) to register. For further information, telephone 0101 (312) 870 5200.

If the above charges are all a little high for you, then a cheaper way to access a system in the US is through Microlink, the computer users' database on the Telecom Gold electronic mail system.

Microlink provides access to Mnematics, a New York-based system for 25p per minute – this includes all international communication charges. For information on Microlink, contact Database Publications, Europa House, 68 Chester Road, Hazel Grove, Stockport SK7 5NY (061 456 8836).


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# On the right track



*Mark Jenkins reviews Hybrid's SMPTETrack ST*

***S****MPTETrack* ST is an expensive but powerful 60-channel Midi composer for the 520 and 1040 STs. As on the much cheaper *EZ Track* package, *SMPTETrack*'s basic screen has a track display on the left and a control display on the right and can be regarded as a mixer connected to a tape machine — a tape machine with a capacity of 17,000 notes (520) or 63,000 notes (1040) divided between 60 tracks, of which 20 are displayed at a time.

The system synchronises to tape, Midi or drum machines as masters or slaves, has a software-based Midi Thru function to pass on Midi information while converting it to any channel, and both songs and tracks can be transposed (with an exemption function if you've written drum beats which must keep the same values) and you can name both songs and tracks and solo or mute tracks while recording or playing back.

The display for one track could look like this,

–> 1 Soprano 1 <–> E l c 16 p 16%

It's an expanded version of the *EZ-Track* display and represents the cursor (to show this is the channel currently being worked on), the track number and name, on/off mode (an inverted arrow represents off), the end of track sign when a track has finished playing, the activity indicator which uses different symbols to show from one to ten or more notes being played on a channel at any one time, the "|" representing "More than 10 notes", the "changed since last save" indicator, the Midi channel number, the memory protected indicator, and the memory used figure.

Top-of-the-screen menus are desk, file, track, edit, graphic, Midi, box options and safety. Track allows you to protect tracks from erasure and when updated will help set up shadow tracks offering transpositions and other variations without consuming memory, while the edit facility offers re-arrangement features including chain assembly and velocity editing. The graphic note-by-note editing option will come as part of the first (free) update.

Midi allows you to select the basic Midi channel of operation and send various commands to all connected synths, while Box controls the functions of the sync or SMPTE interface box supplied with the system which connects to the joystick and RS232 ports. Synths are connected to the built-in Midi ports.

Options lets you choose different types of punch-in and quantisation (overdub modes and auto-correction of sloppy playing) while safety determines how easy it is to pull down new functions, how much warning you get about irreversible changes and so on.

After you've played in one track the mouse or keyboard can be used to enter a punch-in time to correct any mistakes, and the program can offer you any length of count-in and will automatically drop back into play mode at any point. Several controls such as stop, pause and play resemble a tape machine's front panel.

All this is pretty similar to the basic *EZ Track*, but *SMPTETrack* goes further in providing registers for mute patterns and tempos and chains which allow you to compose entire songs. Each of the 27 registers available for each song stores all the settings for one segment, and a group of such segments builds a section, of which there can be 100 in each song. The chain display is a simple bank of 100 boxes into which you can enter section numbers just as on many drum machines.

You can also enter notes in step time down to the smallest Midi clock simply by hitting *Pause* while recording, and the resolution and playback speeds are independent of the SMPTE format chosen. To explain — SMPTE is a time code developed by the Society of Motion Picture and Television Engineers in the US, and specifies time in hours, minutes, seconds and frames. Since TV standards vary throughout the world you may find 24, 25 or 30 frames per second in a SMPTE code, but *SMPTETrack* ST copes with all these variants.

It also copes with Hybrid's patch filer *Gen Patch* which stores sounds from their Casio Editor *CZ Android* or DX7 editor *DX Android*, or directly from any other synth. The advantage of *Gen Patch* compatibility is that you can store all the correct sounds and samples for the musical instruments along with the tune in the sequencer, and they will all load before the sequence begins to play.

Track copy, track mix, quantise and durate facilities (equalise the length of all notes in a track) are easy to use in *SMPTETrack*, and you can divide a track into several by its constituent Midi channels, thus separating and previously merged information for subtle alterations. You can edit the velocity of notes in various ways if your synths are velocity sensitive and review the section changes and tempo changes you've programmed. Midi song pointers are used, to tell other Midi equipment which point in a song they should have reached, and you can program a delay into each track to compensate for problems in the system, or as a special effect.

The sync box just offers tape in/out and aux in/out jack sockets to tie up to tape and to an external non Midi drum machine. The major advantage of *SMPTE* is that it will let you use a video machine as the master controller for your whole system, and you can drop in to the middle of a composition to make changes without having to play the whole thing, since the SMPTE code contains the absolute time on the tape rather than just a pulse giving the tempo. Such a system will allow you into the lucrative world of film and TV scoring, which could make you millions.

Of course, you'll need a bit of cash to get started. *SyncTrack ST* is £349.95 and the full SMPTE version *SMPTETrack ST* is £539.95, both figures including the hardware interface. The first update is free and subsequent ones will be cheap, and you can update from *SyncTrack* to *SMPTETrack* at a discounted rate.

I found *SMPTETrack* a pleasure to use, in some ways less powerful than Steinberg's similar *Pro-24* package but for that reason much simpler to comprehend and work with. It's part of a growing Hybrid Arts system, and *SyncTrack* can be recommended for any Midi and clock pulse, non-SMPTE applications. It will be good to see the planned updates though, since these will make the package really comprehensive.

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**COMMODORE PRINTER MPS 801,** four fonts v g c. Genuine reason for sale £80 o n o. Tel Norman (Essex) 0245 283215

**SOFTWARE PUBLISHING!** Send your example tapes to Hamco Software 3 Hinckley Road Burbage Leicester LE10 2AF. Amstrad only. Royalties paid on all published software. All software will be considered

**ATARI 520 STM** one meg memory and drive ½ gb res SM 124 monitor some software £430. Also Philips medium res colour RGB monitor £170. All as new. Tel (Suffolk) 0440 81896

**COMMODORE 641/128;** public domain software discs full of games utilities education. Send 30p stamps for details to Data Quest 92 Bishops water Wexford Ireland

**WS2000** modem RS232C interface both items never used. Ideal communication setup for the Amstrad CPC range of computers £120 o n o. Tel 01 668 4286

**ATARI CASSETTE DUPLICATOR** Make back ups of your tapes (single or multi stage). Supplied with full instructions for only £2.95 (Yes £2.95!!!) send cheque/P O to S Murray 28 Edgehill Gardens Petterton Aberdeen

**ATARI 130XE** kit for sale 1050 drive 1060 with happy cassette discs cartridges joysticks books etc £300 the lot or will split. Tel James on 0560 200070 after 7pm

**ADVENTURE PROBE** is a monthly magazine for adventurers containing hints reviews discount software and much more. Send £1 for sample copy to Adventure Probe 78 Merton Road Highfield Wigan WN3 6AT

**DRAGON 64,** disc drive joysticks light pen. Software includes games business educational utilities OS9 Basic 09 Forth books compiler discs and magazines £200 o n o. Tel New Mills 46255

**MASTERFILE DATABASES,** following titles available: Amstrad Basic Instruction Set, Countries Of The World, English Football Clubs, Famous Cocktails. All £1.50 each on cassette. Mr C Jones 106 Dorchester Road Weymouth Dorset

**COMMODORE 128,** tape deck, two joysticks plus over 250 original software titles. All books magazines and leads included. Worth £2000+ sell for £650 o n o. Tel 0525 374931

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**CITIZEN 120D NLQ** printer parallel interface Epson and IBM compatible 3 months old hardly used £130. Tel 01 462 0660 (Michael) after 6pm

**QL, JS** Rom Philips mono monitor serial printer supercharge compiler toolkit microdrives books £160. Tel (Putney) 01 785 2738

**ATARI ST** software for sale. Titles are World Games Starglider O Ball Leader Board, also dust covers for 520 ST and single disc drive. Sell for £65 o n o. Tel 0706 25829 after 7pm

**ATARI 800XL** + 1050 disc drive + £100 worth of software. Cost £300 sell £160 o n o. Tel Surjeeve on 02774 58188 evenings

**AMSTRAD CPC 6128** green screen DMP 2000 printer excellent condition. Software including Devpac 80 assembler graphic adventure creator Protext word processor several games £300. Tel Andy Swindon (0793) 826488

*John Cook looks through this week's new arrivals*

## Amstrad CPC

**Program** *Chickin Chase* **Type** Arcade **Price** £1 99 **Supplier** Firebird 74 New Oxford Street London WC1A 1PS

Another first for Firebird Silver – the world's first free range software




## BBC and Electron

**Program** *Starquake* **Type** Arcade Adventure **Micro** BBC B **Price** £9 95 (tape), £11 95 (disc) **Supplier** Bubble Bus 87 High Street Tonbridge, Kent TN9 1RX

Conversion of Bubble Bus s greatest hit with 500 screens of weebling around – if you re that way inclined

## Commodore 64

**Program** *The Image System* **Type** Application **Price** £19 95 (tape) £24 95 (disc) **Supplier** CRL Group CRL House 9 Kings Yard, Carpenter s Road London E15 2HD

The art package with a difference – it allows you to distort any on-screen image so you get to create twisted Top of the Pops style effects A bit pricey for what it is – but get next week s mag for £5 off

## Enterprise

**Program** *ZZZIP* **Type** Utility **Price** £12 95 (mail order only) **Supplier** Boxsoft 12 Whitegates 100 Station Road New Barnet Herts EN5 1QR

Basic Integer Compiler for users that want to speed up their programs

## MSX

**Program** *Terminus* **Type** Arcade Adventure **Price** £2 99 **Supplier** Mastertronic 8–10 Paul Street London EC2

512 screens that Interior Designers will find most upsetting To be played with sunglasses firmly on

## PC and Compatibles

**Program** *Icon Quest for the Ring* **Type** Arcade Adventure **Price** £14 95 **Supplier** Status Software Creative Sparks Publishing Unit B11 Armstrong Mall Southwood Summit Centre Southwood Farnborough Hants GU14 0NP

Statue Software – a swanky title if ever I heard one – is the upmarket side of Creative Sparks They re planning to release stuff on all major formats, including Atari ST but the first two releases are for the PC compatibles

Icon is a maze based arcade adventure with a Norse plot straight out of Wagner

**Program** *Fortune Teller* **Type** Prediction/Astrology **Price** £14 95 **Supplier** Status Software Creative Sparks Publishing Unit B11 Armstrong Mall Southwood Summit Centre, Southwood, Farnborough Hants GU14 0NP

Do you ever sneak a look at your stars in the newspapers? Isn t it funny how 1/12th of the population at a time take turns in having emotional problems probably at your workplace possibly involving a hamster

If you prefer a more personal form of reassurance then this kind of astrology program might be up your street as you must input your exact time, date and place of birth, shoe size inside leg measurement, etc before it comes up with any predictions

**Program** *Five-a-Side Soccer* **Type** Arcade **Price** £9 99 **Supplier** Mastertronic 8–10 Paul Street London EC2

## Spectrum

**Program** *The Growing Pains of Adrian Mole* **Type** Bookware **Price** £9 95 **Supplier** Virgin Games 2/4 Vernon Yard Portobello Road, London W11 2DX

More Bookware from Mosaic/Level 9 published by Virgin Like the original *Adrian Mole* and *The Archers* it s not a true adventure but a series of scenes with some atmospheric text finishing with a number of options which you select by pressing the appropriate number

Some find this a bit too passive me included but it s fun enough for the first couple of goes

**Program** *Imagination* **Type** Adventure **Price** £1 99 **Supplier** Firebird Silver 74 New Oxford Street, London WC1

Excellent graphic adventure from the keyboard of Peter Torrence, who brought you *Seabase Delta* and *Subsunk* from the same stable Great value

**Program** *Silicon Dreams* **Type** Adventure Compilation **Price** £14 95 **Supplier** Rainbird Software 74 New Oxford Street London WC1

**Program** *Chicken Chase* **Type** Arcade **Price** £1 99 **Supplier** Firebird Silver 74 New Oxford Street London WC1A 1PS

Pick of the week

# Basically the best

**Program** *GFA Basic* **Type** Utility **Micro** Atari ST **Price** £59 95 **Supplier** Glentop Press Standfast House Bath Place High Street Barnet Herts EN5 5XE

The ST is a great machine no doubt about that but one of the major complaints you ll hear from owners is that the Basic takes up a lot of memory (138 odd K) isn t amazingly fast and the editor is lousy

This immediately created a market for alternative Basics of which the most popular so far has been *Fast Basic* by Computer Concepts But now now we have *GFA Basic*

*GFA Basic* is really fast

Glentop – distributors of the package in the UK – quote average PCW benchmarks of 1 4 seconds but the speed isn t limited to the mindless number crunching, as the graphics demos spectacularly prove *GFA Basic* is also compact taking up 55K of valuable memory – yet it provides a structured programming environment second to none with a bewildering array of useful commands

A silence descended on the office and mouths hung open as the demo of the block memory move command drew a complex pattern in a window then plastered copies of it all over the screen at the rate of about five per second

The editor isn t perfect, but is a vast improvement over Atari s own There's a compiler planned for release around March, as well which will make the code independent and speed it up by a factor of two Sounds interesting doesn t it?

Over the next couple of weeks we ll be taking a closer look at the program and deliver a final judgement soon – but if you re in the market for a better Basic on the ST don t spend your money till then

# Playing the name game

The computer games industry is in many ways like the record industry although significantly smaller Both are now mainly in the hands of a few large companies with the independent firms sometimes surviving with difficulty Both are unduly influenced by the distributors and their sales charts, both have large advertising budgets in the specialist press and both produce either massive hits or dismal failures, with few releases between the two

There is however, one major difference between the two industries — that of the credit given to the people actually responsible for the material produced

In the record industry records are sold by the companies on the basis of the artist producing them and people buy them for the same reason The *Brothers in Arms* album for example, sells to people who like Dire Straits and not because it happens to be issued by Vertigo Records The record s producer, engineer and any additional players are also fully credited

The computer games industry on the other hand is entirely different The name of the programmer may be mentioned in small print but the designer and graphic designer of a program are very rarely mentioned in the cassette inlay or in the adverts, and sometimes not even on the screen during the game

Prominence is instead given to the company name and occasionally to a producer (looking at an Ocean inlay would make you think that David Ward was single handedly responsible for almost its entire range)

> *"The name of a computer programmer may be mentioned in the small pnnt, but the designer and graphic designer are very rarely mentioned"*

In fact the only company I can recall giving full credit to their programmers and designers was the old Imagine shortly before its death The company had always listed the programmers and designers, later including a small photo of the programmer but it only reached their peak towards the end of its life when the new, more colourful inlays were introduced These which included in the inlay a photo of the programmer and a short career history started with the second issue of *The Alchemist*, and continued on through the more disappointing games issued until the company s demise

Few other companies if any followed this policy (although both Crystal and Digital Integration did mention programmers names in their adverts), probably because of the cost Most instead rely on interviews with and articles about programmers in magazines, which is fine as long as the programmer has just written the latest number one smash Others tend to be ignored

This is a shame because if all the people involved were featured in the inlays then there would be an additional guide as to the likely quality of the games Admittedly one bad program could harm sales of their next game but in general this could only lead to another improvement in the standards of games released (or at least make people wait until the reviews of the game were out possibly saving them some money)

Some superstar programmers already produce sales due to their names on the game and other companies advertise on the strengths of past successes — By the author of *MegaThargs* etc There are flaws in buying by name', but these are no more than exist at the moment, where the brand of the game often influences choice Besides, customers can always wait for the reviews

Thus surely the full crediting of authors on their games would be useful all round possibly increasing quality and so sales and giving the many excellent programmers around more of the recognition they thoroughly deserve

**Robert Halliday**

# NEXT WEEK

### Role Playing Games

**Apologies for not including this feature this week, as we said we would, but it will appear in the next issue**

**We ll tell you all about the genre, how to get involved and some of the computer implementations in this field**

### Teletext adaptors

**Obtaining teletext frames on your computer Two new such products have just come on to the market and Chris Jenkins has the details**

### Shadow Skimmer

**Smooth scrolling arcade action on the Spectrum, from The Edge John Cook caps away to his heart's content.**

### Nemesis

**Konami's micro version of *that* coin-op game. Faithfully reproduced, or another disappointing arcades-to-micro job? Find out next week**

### Superbowl winners

**We're up to our necks in entries to our Superbowl book competition, so it will be a relief to announce the winners and give you all the answers**

## Hackers












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